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BULBS FOR POTS

AND SPRING PLANTING IN THE GARDEN



A CATALOG OF THE BULBS AND PLANTS OF THE AMARYLLIS, IRIS,
ORCHID, GESNERIA AND OTHER PLANT FAMILIES
AND MANUAL OF THEIR CULTURE
AFRICAN VIOLETS

Many Reduced Prices. New Items Listed. Complete Culture Directions.
A Personal Letter,—to You.

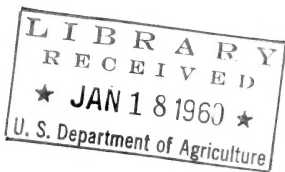
SPRING 1960



CECIL HOUDYSHEL

1412 Third St.

La Verne, Calif.



Librarian
U. S. Dept of Agriculture
Washington 25, D. C.

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A Personal Letter — To You.

Dear Floral Friends,

First I wish to quote a famous poem by my last German teacher at Kansas University, Lawrence, Kansas.

A picket frozen on duty. A mother starved for her brood;
Socrates drinking the Hemlock, and Jesus on the rood;
And millions who humble and nameless, the straight hard pathway plod
Some call it consecration, and others call it God.

William H. Carruth, born 1859. Died 1924 at Palo Alto, California.

Professor Carruth, E. H. S. Bailey and Professor Williston, in the vicinity of Stanford University at Palo Alto. Ruth Carruth. (I do not recall her "married name")



Cecil Houdyshel

once wrote to me and asked if I remembered her. My reply was "I do remember seeing your red hair atop your head crossing Kansas University campus."

Professor E. H. S. Bailey called on me here at La Verne, Professor Williston gave me the first Crinum bulbs I ever saw. He was probably "the smartest man" I have ever met. Once in lecturing on Mosasaurus Skull, he pointed out every bone and gave its name. He pointed out the foramen, thru which nerves pass and gave the name. He quoted references from Latin or most any modern language—in original tongue and translated it into English.

At the close of his lecture, he stepped back, pushed his old hat to the back of his head, rolled a quirley and said, "My, how I wish I had time to study and learn."

Well, I've taken a lot of your time but I will quote again.

Though from out my bourn of time and space,

The flood may bear me far.

I hope to meet my maker (God) face to face

When I have crossed the bar.

There is an old saying, "you can't make a silk purse out of a sow's ear," nor can you make something out of nothing. The conclusion is that God, time and space and all material, even that of our own bodies has always existed. This is imponderable—we can't explain it or understand it, but it is true nevertheless. They are infinite.

Be sure to note our listing of Gladiolus and many other new items for your garden pleasure this spring. If you have not tried growing Gloriosa rothschildiana you should.

Visitors are always welcome. From Los Angeles take San Bernardino Freeway to Ganesha turnoff (Los Angeles Fair) to the Fair Grounds, left to first street (E), right to Third Street, left to 1412 3rd St. From the east turn off freeway at Towne, right to La Verne Rd. (a short block), left to Lincoln, right to 3rd St., left to our place.

Write to Mrs. Houdyshel for information on lectures on African Violets and rare bulbs. Also has slides to rent.

Be sure to see the Pomona Valley African Violet Society's Sixth Annual Show, April 18 and 19 in the Community Building just west of D Street on 3rd. Across from the Alpha Beta Food Market. Parking in rear. Tell your friends about the show.

We have many Camellias now in bloom. They are not too difficult and will stand temperature only a little above the freezing point. Our sources are Councilman Camellia Acres at El Monte, California, Armstrong's Nursery at Ontario, California, and Marshal at the sign of the Red Camellia, San Gabriel, California. From this source I obtained the variety Richard Nixon and Darkagura Red.

Sincerely,
CECIL HOUDYSHEL

TERMS AND INSTRUCTIONS FOR ORDERING

Prices in this catalog cancel all former prices. They are for one bulb unless otherwise stated. 12 bulbs are sold for price of 10 or 6 for price of 5. 100 bulbs for price of 70 unless noted. Books, garden supplies and plants take no quantity discounts. California customers must add 4% Sales Tax.

Remit in advance, in full, by check or M.O. No C.O.D. No charge accounts carried. Nothing reserved unless paid for in full. These terms reduce our expenses and lower the costs to you. 1, 2 or 3 cent stamps are accepted for small sums—under \$1.00.

Postal rates. Please include 50c to help pay postage and packing for all orders of \$3.00 or under unless otherwise stated.

If you want your order to go **Express Collect** for added safety and protection we include either larger sizes or extras. If by **air mail** we charge the customer only the excess cost above that required by regular parcel post. Estimate this and state you will promptly pay the difference if not enough.

Insurance up to \$10.00, 10c. \$10.00 to \$50.00, 20c. Postal insurance covers all except freezing in transit. **Special Handling** costs 25c up to 2 lbs.; 2 to 10 lbs., 35c. **Special Delivery** is better as it also speeds delivery and is handled more carefully. We are not responsible if plants are not immediately taken indoors. Up to 2 lbs. costs 45c. 2 to 10 lbs., 55c. Over 10 lbs., 70c. Each fee is for one package only.

Wholesale. There are several items we can supply wholesale. Send your want list and we will quote our best quantity prices. We can quote African Violets at wholesale.

Foreign Orders. If postage exceeds that to our 8th postal zone we charge the excess. Include a little extra for excess postage. **Canadians** should apply to Sec. of Destructive Insects and Pest Act, Advisory Board, Ottawa, Ontario, for Permit and labels and send with order. **Important.** Canadian regulation requires a Certificate of Health, from our Inspector, to accompany each shipment. To do this he must make a special inspection of each order. He charges us 50c for this which you must pay. Please add 50c to each order for this purpose. This 50c fee applies also to all foreign orders. Many Latin American Countries have laws governing importations. Be sure to inform yourself and act accordingly. Ask your postmaster.

Partial Shipments are made if bulbs are not all dormant at same time. We deliver everything within the season for correct planting. We must collect from you the fees for Insurance, Special Handling, Special Delivery and all Export fees mentioned above on each partial shipment and on each package of the same shipment if more than one is necessary. Please say that you will pay the difference if you have not sent enough.

We guarantee our bulbs to be true to name and healthy and replace them if not. If you follow our directions in this catalog, they will grow and flower. We cannot assume responsibility if you do not. As necessary **culture directions** are in this catalog, we send none with the bulbs and other plants.

Catalogs. Spring Catalog mailed Jan. 1; Fall Catalog, Aug. 15, or soon after. If you do not send us your orders your name is dropped from our mailing list. If not interested please refuse catalog or ask P.M. to return at our expense. Current catalogs are free. If an old catalog is wanted, please send a dime for it.

General Culture Directions

Rich sandy loam is the best soil. But if too sandy, it may lack fertility. It will require more rainfall or irrigation. The ideal garden soil will contain sand, clay and humus.

All soils require the addition of much humus. Compost all garbage, weeds, leaves, cut branches and manures. When rotted, add to soil and thoroly mix.

Fertilizer. We recommend only animal manures, compost and commercial fertilizers that are mostly of organic origin such as **Spoonit**, listed in this catalog. In the outside garden fresh manure can be used on most plants that are growing vigorously as a very light mulch, but after flowering. Too much fertilizer before flowering may almost or wholly stop the flowers. When the growth of a plant becomes abnormally rapid it is unlikely to flower or produce fruits.

Do not fertilize a plant in dry soil, or use manure (unless thoroly rotted in a compost heap) in the soil before planting bulbs, seeds or plants. Water lawns, trees, and plants well the day before applying fertilizer and again a few days after application. Do not fertilize a sick plant in order to make it well. You are more likely to make it worse or even kill it. Small plants and seedlings should not have too much either. Lush, rapid growth may be weak and "flabby." Sturdy growth with firm structure is better. Little and often is the best rule for fertilizing.

Compare plants with people. Both are living, organic beings. Air, water and food are necessary for their growth and health. But one does not give babies beefsteak, fried potatoes, apple pie and a cup of coffee. Nor is this a good diet for an invalid or an ill person, however good it may be for one in vigorous health who performs hard physical labor. Nor should plants be over-fed or fed at all if sick or thirsty. But since one cannot add much rich food when potting a bulb, very good results may be obtained by a monthly feeding of very weak liquid manure, color of very weak tea. A more convenient way is to use Spoonit, which we list under Garden Supplies.

After blooming, many neglect their bulbs. As a result the bulbs do not flower the following year. For success one must continue to give good culture. This is the time to fertilize, irrigate and cultivate frequently, until yellowing foliage indicates the bulb is becoming dormant. During this growth period next year's flower buds are formed.

Depth of planting and distance apart often cause too much concern. Bulbs usually have sufficient adaptability to do well under widely varying conditions. If left in one place a few years, most bulbs adjust themselves to their preferred depth. Approximately, bulbs should be about 2 or 3 times their diameter apart unless their habit of growth is spreading—like *Ranunculus*. In such cases plant farther apart. Bulbs as large as *Daffodils* may be 4" to 6" deep. Bulbs with a heavy erect stem need deep planting in order to remain erect. Plant deeper in light sandy soil than in heavy soils and in cold climates to protect them from frost. A winter mulch will help protect.

Pests. Snails, slugs, ants, mealy bugs, thrips, aphids, leaf hoppers, mites, red spider and scale are among the most serious pests in the garden or on house and greenhouse plants. They must be controlled. See our listing of **Insecticides** under **Garden Supplies**.

Acid and Alkaline Soils. Most plants thrive in mildly acid, neutral or mildly alkaline soils. But others do not have so wide a range of tolerance. *Rhododendrons*, *Azaleas*, *Camellias*, *Gardenias*, *Zantedeschias*, *Caladiums* (and other members of *Arum* family), *Nerines*, *Haemanthus*, *Gloxinias*, *Begonias*, *Orchids* and most shade loving plants require an acid soil. Some like *Gladiolus* prefer mildly acid to neutral soils; *Bearded Iris* do best in neutral to alkaline soils. The acid-alkali balance depends upon the concentration of hydrogen ions in a saturated solution. This is expressed in pH units. pH7 is neutral. Below that the acidity increases; above it the alkalinity increases. For the mathematical, I will explain that the numeral is the negative logarithm denoting the concentration of hydrogen ions in gram atoms per liter.

In regions having heavy rainfall, excess alkali is usually dissolved and carried away by the runoff. Semi-arid regions usually have alkaline soils. Calif. soils usually have too much unless cover crops or applications of humus, which are acid, have lowered the pH. Some Texas soils are too alkaline. The remedy is obvious. Apply humus, ground phosphate rock, or small, even applications of sulphur. Improve the drainage.

Chlorosis of plants, indicated by lighter green streaks of foliage, may not be due to a virus disease, in all cases. It may indicate lack of all required nutrients, some of which cannot go into solution in an alkaline medium. Among such nutrients are Nitrogen and Iron which are soluble only in acids. Mild acidity is usually best. Iron Chelate in minute quantities often corrects chlorosis. Be careful. It burns if too strong. Iron Chelate is now added to Spoonit.

Potting Directions. Use clean pots of the right size, neither too large nor too small. A 2½" *Amaryllis*, for example, needs a 6" pot. A 1½" *Eucharis* needs a 5" pot. Small bulbs like *Ranunculus* or *Achimenes* may have 3 to 5 in a 5" or 6" pot. Cover the hole

at bottom with a piece of broken pot, concave side down. Above this place a handful of sphagnum moss to prevent the soil from sifting into and clogging the drainage material.

The drainage must be perfect and it is essential that the soil above this drainage be of a friable texture that permits water to pass thru freely. Only sandy soil will answer this purpose. Add enough sand so that it feels very gritty. The potting soil we like best is about 2 parts of peat or leaf mould and 1 of sand. If peat is used a little woods earth or pure rotted leaves and twigs may be added. Plain dirt, especially if clay is present, or any mixture that becomes lumpy when dry is likely to produce poor results. Mulch surface with wet sphagnum to prevent erosion when watering and too rapid drying at surface. Special directions are given for certain plants with the listing.

Basketing. Vining or pendant plants like Achimenes, Aeschynanthus and several of the other Gesneriaceae, Begonia Lloydii, Ceropegias, etc. look best and do best in our wire baskets, altho they can be grown in pots, suspended by the "Snap-on" pot hangers. Wire baskets allow perfect drainage and we prefer them also for some orchids like Laelias. We offer the best wire baskets made. Painted wire baskets soon rust out. Ours are galvanized, polished, not soldered but welded.

Place a thick layer of wet sphagnum on bottom and sides of basket. It should be well compressed and at least 1" or 2" thick. For the center one can use a mixture of peat, leaf mould and sand—or any soil formula favorable to the plant. For certain Orchids, Episcias and sometimes other plants, we use only sphagnum thruout.

Fertilizers for pots and baskets. The soils recommended above are low in fertility. One cannot add enough to last an entire season. Such an amount would burn the young roots as rapidly as formed. A small quantity of dry, powdered dairy manure is safe but we seldom use it. We prefer to add 1 tablespoonful of bone meal which is slowly soluble and slow acting and a level teaspoonful of blood meal, which is strong and quick in action, to each 6" potful of soil. Too much blood will burn. When plants are in full growth, they may be fed with weak liquid manure, color of weak tea, every three to four weeks. Spoonit supplies a more complete ration, better balanced and more convenient. We also recommend Blue Whale products. Use of inorganic forms of nitrogen can have bad results.

Sources of Further Information. Always consider the source of your information. Experience is worth more than reading knowledge. Commercial growers usually have had the experience. Please note our **Garden Reference Books**. Join local Garden Clubs. Subscribe for as many Garden Magazines as you have time to read. We especially recommend **The Flower Grower**, Dept. H, Albany, N.Y., **Popular Gardening**, Dept. H, 530 Fifth Ave., New York 36, N.Y., **Horticulture**, Dept. H, Boston 15, Mass., **Sunset Magazine**, Menlo Park, Calif., **The Gloxinian**, Elvin McDonald, Gary, Oklahoma.

GARDEN REFERENCE BOOKS

Bailey's Cyclopedia of Horticulture. This 3-vol. set of over 3,600 pages describes almost every cultivated plant and has a wealth of culture information. Price \$52.00.

Hortus Second (Bailey). A concise Dictionary of Gardening. This 778-page volume lists and describes nearly every plant offered in catalogs, and some that are not in the Cyclopedia of Hort. It contains a few culture hints. Price \$13.50.

Amaryllis and How to Grow Them, by Peggy Schulz. This book was written for amateurs and by a well known amateur. It contains much useful information. 128 pages, many line drawings, photographs and two colored plates. \$2.95.

Bulb Magic In Your Window. 100 bulbs to grow in your window, from Achimenes to Zephyranthes. 214 pages. 3 color plates and 42 full page illustrations. Complete growing instructions. \$3.95.

House Plants for Every Window, by Dorothy H. Jenkins and Helen Van Pelt Wilson. Formerly Enjoy Your House Plants. An up-to-the-minute revision of "the most popular book on house plants ever written." Covers many plants for the window garden. A must for The Window Gardener. \$3.50.

African Violets, Gloxinias, and their relatives. A guide to the cultivated Gesneriads by Harold E. Moore, Jr. 5 color plates and more than 40 line drawings, illustrating nearly every species described, have been expertly prepared by Marion Ruff Sheehan to help the grower identify his plants. Never before has this ornamental family been so completely and artistically depicted. \$10.00.

The New Greenhouse Gardening for Everyone, Ernest Chabot. Important factors are noted, including correct temperatures for forcing plants, bulbs, and orchids. \$4.75.

How to Grow Rare Greenhouse Plants. A new book on greenhouse gardening by Ernest Chabot. Complete directions for greenhouse culture of 260 rare plants. Everyone having a greenhouse should have both books. 182 pages. Illustrated. \$4.00.

Geraniums, Pelargoniums, by Helen Van Pelt Wilson. 248 pages, 7 color plates, many drawings and illustrations. Best book on this subject. \$4.50.

Gloxinias, and How to Grow Them, by Peggy Schulz. Illustrated by colored plates and line drawings. Many Gloxinia relatives discussed, 128 pages. \$3.50.

Growing Plants Under Artificial Lights, by Peggy Schulz. 146 pages. One color plate and many illustrations. \$3.50.

Tuberous Begonias, by Worth Brown. Mr. Brown is one of our most important hybridizers and wholesale growers. His book is a complete guide for the successful growing and propagation, outdoors or as house plants. 128 pages, illustrated. \$3.50.

The Complete Book of African Violets, by Helen Van Pelt Wilson. This is completely new and gives best information on hundreds of varieties. 29 Saintpaulias are shown in full color. 256 pages, fully illustrated. \$3.95.

How to Grow African Violets, by Carolyn Rector. 62 pages, paper-board covers. Illustrated. How to grow from seed, prepare potting soils, pollinate and hybridize, control pests, diseases, groom plants for show and grow from leaf cuttings. \$1.50.

An Easy Guide to African-Violets, by William L. Meachem. For beginner or expert, it is all here — an easy guide to an absorbing hobby. 61 pages. \$1.95.

Arranging African-Violets, for home decoration, by Emily Stuebing. 111 pages with 40 original halftone illustrations. \$2.95.

The Little Bulbs, by Elizabeth Lawrence. Learn the charm of growing little bulbs. Miss Lawrence is a dedicated gardener. She won the Herbert Medal for her book "A Southern Garden" in 1943. \$4.00.

How to Grow Orchids, by Cecil Houdyshel. This booklet has recently been revised and is now 12 pages (formerly only 10 pages). The price is now 75c, postpaid.

Amaryllis Manual, by Hamilton P. Traub. Dr. Traub, editor of Plant Life, has long been regarded as a world authority on the botany and cultivation of the Amaryllis. Culture, ornamental uses, and many forms of the species are treated in detail in this first complete and scientific work. Accompanying appendices provide the botanist with all the information he requires for a thorough knowledge of this important group of flowers. Illustrated. \$7.50.

Fuchsia Gleanings. 32 page paper back book containing eleven articles by leading growers in California. These articles tell you how and where to grow. \$1.00.

Garden Supplies

Postage Extra is necessary on several items below. The weight when packed is given on these items. It is clearly stated that you must send the postage when you order. Here is how to find it. We are very near Los Angeles. Call your P.O. and ask the cost of postage on the packed weight given from your P.O. to Los Angeles and send us that amount. Orchids that are shipped in pots or baskets are sent by express f.o.b. The minimum cost is \$1.95.

Isotox. Improved Isotox Garden Spray M. For African Violets use 1 teaspoon to one gallon of water. Mix well. \$1.19 for 4 oz. bottle. By mail add 20c for postage and packing, plus 5c Sales Tax in California. Wonder Garden Spray, \$1.30, postpaid, plus 5c tax in Calif.

We assume no risk for results with insecticides. Read instructions carefully.

Spoonit is the fertilizer we use on African Violets and on all house plants. **Analysis:** nitrogen, 18%; phosphoric acid, 20%; potash, 16%; chelated iron. To use, dissolve level tablespoonful in 1 gallon water or level teaspoonful in quart. Apply every 3 or 4 weeks. Transplants half strength. It never burns. **Prices:** 6 oz. package 60c plus 11c postage. 15 oz. pkg., \$1.25, plus postage on 1 lb. (See paragraph 1 above.) 2½ lb. pkg., \$2.50 plus postage on 3 lbs. Try the new **Orchid Spoonit**, 1 lb. \$1.25 plus postage on two lbs. **Spoonit** can now be furnished in a 5 lb. drum for \$4.50, f.o.b.

Blue Whale. 12 oz. liquid Blue Whale, \$1.00 postpaid. Sea Rich, Blue Whale Peat Moss, Bantam bag (approximately 10 lbs.) \$3.25 prepaid. Dealers write for prices. We have Blue Whale liquids in several sizes as well as the Peat Moss, at the nursery. No. 2 Bag of Blue Whale \$1.00 postpaid.

Horticultural Peat. High quality. 3 lbs., 50c. Send postage for 5 lbs. 5.6 cu. ft. Bales at nursery only, \$6.50.

Plastic Pots. Green. 2¼" starter pots 25c doz. \$2.00/100. 3", 50c doz. 100/\$4.00.

Osmundine, best Florida grade, \$2.00 lb. postpaid.

N.P.I. A new planter mix. 150 cubic inches, 49c, postage for 2 lbs. 600 cubic inches, \$1.49, postage for 4 lbs. A Nutrilite product.

True Organic Planter Mix. This is a carefully formulated planter mix, containing Peat Moss, Leaf Mold, Charcoal and Earthworm Castings. 49c plus postage for 2 lbs. 89c bag plus postage for 4 lbs.

Sphagnum Moss. Best we can get. 70c per lb. gross weight. Postage extra, for 1 lb.

Plant Labels. The following are plastic labels, easily written upon with pencil. **Pot Labels**, length 4½", 35c doz. Length 3½", 30c doz. Small labels for African Violets, 2" long, 20c doz. 75c for 100. **Orchid Labels.** Perforated on one end, but without wire or cord, 2½", 30c doz. **Aluminum Tree Labels.** Emboss name on label with sharp pencil or ball point pen. Two sheets of Aluminum make this strong and permanent, with wire to tie on, 35c doz. Package of 50, \$1.00.

Wire Baskets. Our wire baskets are electrically welded, galvanized, non-rusting. The best obtainable. They look better, last longer than painted, soldered baskets and cost but little more. Price, with hangers, 8", \$1.00 ea., \$11/doz. 10", \$1.25 ea., \$13.50/doz. 16", \$2.75 ea., \$25.00/doz., postpaid.

Snap On Pot Hangers, for hanging any size pot. Galvanized. 35c ea. Send 10c ea. for postage. \$4.00/doz.

Baffle Spray Fogger. For greenhouse, lathhouse or outside. Fits ½" pipe. Adjustable fog spray thrown 6 ft. increases humidity, lowers temperature. Price, \$2.10; \$2.20 by mail.

Rootone with Fungicide—Stimulates roots, controls soil diseases. Dust seeds, roots of transplants, end of cuttings or base of bulbs for quick rooting, more rapid growth. 2 oz. jar \$1.00.

Vitamin B-1, 100 tablets, 75c.

Directions for use, applying only to our own tablets. In transplanting bulbs or any plants, loose roots, dissolve 5 tablets in 1 gal. of water. Soak roots in this 15 to 30 min. Pour solution around plant when set. To stimulate growing plants, for the first application, dissolve one tab. in 2 gal. water. For succeeding waterings, use 1 tab. to 4 gal. water once a week. **Warning.** Do not soak dormant bulbs in Vit. B-1. It rots them.

CATALOG ARRANGEMENT

is by Plant Families, according to their relationship.

In the following lists the **genus** (plu. genera) is mentioned first. After it, the **species** (plu. also species) or horticultural variety is named. The initial of the genus is used for the second and succeeding species. Thus A. will stand for *Amaryllis* or *Agapanthus* depending on the genus last named in full.

THE AMARYLLIS FAMILY — *Amaryllidaceae*

This Family includes the following bulbs, *Agapanthus* thru *Zephyranthes*.

The American Plant Life Society was founded in 1934 as *The American Amaryllis*

Society. The interests of the Society have recently been enlarged to include other bulbs and plants and the name changed but with no lessening of interest in Amaryllids.

The annual book, "**Herbertia**," is devoted to Amaryllids. It consists of about 250 pages, beautifully illustrated, on fine book paper, and is edited by Dr. Hamilton P. Traub of the U.S. Dept. of Agriculture, (now retired) the greatest living authority on the Amaryllidaceae. Each member receives a copy.

The members also receive the occasional publication, "Plant Life," on other bulbs and plants. Due to present increased costs these publications at present are included in one volume per year.

Those who grow Amaryllis as an interesting and intellectual hobby and who love their vivid beauty, are invited to become members of the society. The annual dues are \$3.50 per year, which you may send to Thomas W. Whitaker, Executive Secy., Box 150, La Jolla, Calif.

Agapanthus, Blue Lily of the Nile. They flower here in June to Aug. In the north they must be grown in large pots or tubs and wintered in a frost free room. Plant in full sun exposure in any good sandy garden soil that drains well.

Agapanthus longispatus. Similar to well known *A. orientalis*, but smaller and earlier to flower. Profuse bloomer. For pot growing. 50c, 3 for \$1.25.

A. orientalis. Dark Blue. Larger than *longispatus*. Superior clone. \$1.50.

A. orientalis. Sky Blue. 75c.

A. von Wellighi hybrids. Selected clone. A giant type, very large, round umbel of blue flowers on a tall stem. Late flowering, extending the season. \$2.50.

Alstroemeria seed. Assorted varieties. Plant as soon as received. Packet 50c.

Amarcrinum Howardi. Bigeneric hybrid of *Brunsvigia rosea* and *Crinum moorei*. Beautiful, fragrant, pure pink fls. Fall bloomer. Culture like *Crinums*. Hardy to So. Indiana. Large bulbs, \$2.50. Sm. \$1.25.

A. Dorothy Hannibal, a Les Hannibal origination. A new introduction. Like *Crinum Cecil Houdyshel* it flowers in all seasons. The flowers are a very pretty pink. New low price, \$5.00 ea.

Amaryllis are the easiest, the most showy and popular of all bulbs for growing in pots. Equally desirable for southern gardens where they are hardy along the east coast to N. Car. and on the west to Vancouver. In the middle section they may be grown as far north as Ark. and Okla., but note special directions for colder sections.

How to Grow Amaryllis. In the garden, in the deep south where temperatures go only a few degrees under freezing, Amaryllis bulbs need to be covered only about an inch or two. Farther north they may be planted deeper in protected places and mulched with straw, leaves and/or brush. In Okla., a customer reports a depth of 4" with mulch is safe. Try our "Hardy Hybrids." Amaryllis must not be planted close to trees, shrubs or large vigorous plants, whose roots compete and take the moisture. Irrigate frequently. Rain is seldom enough. The most common error is lack of sufficient moisture. They are endemic to the tropics and in many cases, where there is almost daily rain. The soil should contain much humus. Add well rotted manure and if not slightly acid, add some peat but do not acidify the soil with sulphur or aluminum sulphate. We do not advise planting imported, greenhouse grown bulbs in the outside garden. They seldom do well outside.

In Pots. A 2½" bulb requires a 6" pot. Give a 3" to 3½" bulb a 7" pot. Remove dead roots but every vestige of living root should be left on. Our best success in flowering Amaryllis and in growing them on to larger, better bulbs is in a soil mixture composed of clean, sharp sand one part by volume and a mixture of pure organic material two or three parts. The latter may be pure peat or about half peat and half well broken up or decayed leaf mould, woods earth or completely reduced compost. The final mixture should have enough sand to feel very gritty. Such a mixture drains quickly but retains enough moisture around the roots.

To this mixture we add a tablespoon of bone meal and a level teaspoon of blood meal for each 6" pot. This is enough fertilizer until after bulbs have flowered.

One curved piece of pot over pot hole is sufficient for good drainage. Cover this

with a layer of wet sphagnum. Set bulb in soil and mulch top surface with a layer of wet sphagnum. The neck and about $\frac{1}{2}$ of bulb should be above soil surface. This surface should be $\frac{1}{2}$ " below pot rim. In potting carefully spread out all living roots as they are a great advantage to bulbs. Such bulbs will start more quickly and may be given a warm temperature at once. If there are few or no living roots on bulbs, set them first in a cool place, about 50°, for roots to form and growth start.

We water at once and again when growth has started. With mixture above advised, one is not likely to over water tho you should be a little careful at first, if the bulb had no living roots. For as long as they will grow, potted Amaryllis need frequent watering. They are not only heavy drinkers but gross feeders. If you give liquid manure or Spoonit every 3 weeks, it will be about right. It is also good to vary the diet.

Amaryllis like the sun. If the foliage fades the sun may be too strong or you may not be watering enough. In mid summer in our greenhouses we usually have to apply a little shading to the glass, partly on account of temperatures which may go to over 100° even in our air conditioned houses. Whitewash shading can be washed off when cooler weather arrives. In the house, give them a sunny window. Keep the bulbs growing vigorously until fall, Oct. or Nov. When outer leaves begin to go down, buds have been formed for next season's flowers and bulbs may be dried off and stored in a cool place. Inspect frequently. For early flowers, dry off about Nov. 1, or earlier.

This describes the method we used. $2\frac{1}{2}$ " to $3\frac{1}{4}$ " bulbs potted from Dec. to about Mar. increased in size. A few burst their 7" pots. Some became fully 5" in diam.

A. ambigua. Lily shaped, white flowers with pink markings, on tall straight stems. 5 to 7 flowers in an umbel. The exquisite spicy fragrance perfumes the entire garden. Plant 4" deep in garden in south, to Okla. Believed to be a natural hybrid of *A. elegans* and *A. vittata*. \$2.50.

A. bifida. Formerly known as *A. advena*. **Ox-blood Lily.** This is a fall bloomer. Hardy to So. Ind., Ill., Mo., Kansas, etc. There are 5 to 8 dark red fls. in an umbel. Not suitable for pots. Fall special, 35c ea. 3/\$1.00; \$3.50/doz. Smaller blooming size, \$12.50/100. June or later delivery.

Amaryllis Hybrids. The H & S strain is considered to be the best American strain. Assorted Colors. 90c ea. 3/\$2.50. 6/\$4.75. 12/\$9.50.

Hardy Hybrids. These are not hardy outdoors in the colder states but as far north as North Carolina, Washington, D.C., and Oklahoma these have proven winter hardy if covered by 4" of soil and given a good winter mulch of straw.

This is an extremely vigorous, rapid growing and multiplying strain and equally prolific with flowers. There are always a few flowers in the field in the fall. They might give winter flowers in pots. Most of them are similar in color, orange scarlet with white throat and green keel. An ideal strain for outside planting and landscape effects. Their bright vivid color "hits you in the eye." Altho not an exhibition type, many will like them in pots, where they are easier to grow than the more aristocratic hybrids, and their bright cheerful colors will be most welcome. 75c ea., \$7.00/doz. Large, \$1.00; \$10/doz.

Dutch Hybrids. The most perfect of all Amaryllis, in form, coloring and size of flowers are the Royal Dutch or Warmenhoven strain and the Ludwig strain. These we import from Holland. They represent the highest development of the Leopoldi hybrids, having more nearly flat flowers and shorter trumpets. The colors also have been developed into the most exquisite shades and in solid colors.

Ratings. Many of the following varieties have been tested at Valleevue Test Gardens, Cleveland, O. Known ratings are given. The highest rating is AA. Dutch growers have reduced prices and we therefore lower ours.

Dutch bulb sizes. All are good flowering sizes. We guarantee safe arrival of true to name bulbs. We have others in too small quantities to list that may be purchased at the nursery.

Royal Dutch or Warmenhoven and Ludwig strains.

American Express. Pure glistening Oriental-red in throat with a reflection of violet-rose. Eight and a half inch blooms on scape 26-28" tall. AA. \$5.50.

Apple Blossom, almost white with neatly Dawn Pink featherings, throat is faintly greenish with a dark red ring, scape 4-5 blooms. \$6.50.

Doris Lillian. A. 7½" fls. of deep carmine rose. Perfect contour. A beauty. \$5.50.

Fire King. Bright Red. \$4.00 each.

L'Innocence. Pure white. \$4.50.

Orange King. Clear Orange. \$4.00.

Pinksterflower. 25-27" tall. 4-5 seven and one-half inch blooms. Azalea-pink with slightly poppy-red reflection and applegreen in the throat changing into camellia-rose. \$5.00.

Queen of the Whites. AA. Glistening waxy pure white with faint tinge of green in throat, scape 25" tall with 4-5 nine inch blooms. \$5.75.

Red Master. AA. This variety is in greater demand than any other. Very dark Bordeaux red of immense size. \$6.00.

Roselinde. 7" nicely rounded fls. of carmine rose pink, lighter in throat. This is a very good pink at a low price. \$5.00.

Sensation. Dark red. \$5.00.

Salmonetta. A. Bright salmon-pink, shaded orange in throat. 8" flowers. \$5.50.

Wyndham Hayward. AA. Magnificent dark Oriental red. Fine contour. One of the nearest perfect. \$7.50.

Seedlings of Dutch Amaryllis. We have made some crosses and all bulbs are of high quality and equal to imported bulbs. Not all are flowering sizes but most should flower.

Pink Favorite seedlings, Queen of the Whites or Van Tubergen Pinks. Small bulbs, \$4.00. One of each for \$10.00.

Queen's Page, Queen's Page x Alcgone, Sweet 17, Violetta, or Striped Superiora, \$2.50 each. One each of the five for \$10.50.

Special Price. One each of the 8 varieties of seedlings for \$19.00.

Clivias have evergreen, strap-like foliage somewhat resembling that of Amaryllis. The orange flowers are produced in umbels of 10 to 25 in March and April.

Culture. They are usually grown in pots, even in the south, as more perfect foliage is thus possible, and when in flower one wants them in the house. We grow them in a lath house, lath spaced ½" apart, and in garden under Avocado (evergreen) trees, directly in the soil as they are often grown in Calif. When grown thus they will make very large clumps. They must have shade with only a few flecks of sunshine, but plenty of light and air.

Clivias must never be dried off or allowed to lose their foliage. Keep them well watered after flowering, all summer and fall. Liquid fertilizer occasionally helps. When growth ceases in late fall rest them by giving them less water. But keep moist enough to prevent wilting of foliage. At this time they should have a cool room with temperatures from above 32° to not much over 50°. Pots should be 6" to 8" for small plants and up to 12" for larger. As they grow and increase, do not divide but shift to larger pots. Drainage must be perfect. Potting soil as described under "General Culture Directions." pH 7 is about right. One cannot guarantee a Clivia to flower the first year after moving tho they usually do.

The foliage of our Clivias, grown outside in the ground will not be as perfect as that of pot grown plants. But when potted, they replace the old foliage in a few months and become specimen plants.

Clivia miniata. Wide open soft yellow orange fls. \$1.00, \$2.00 and \$2.75. Only the \$2.75 is likely to flower.

C. cyrtanthiflora. The flowers are tubular and long, yet they are so numerous that they fill a large umbel and make a beautiful floral display. They are distinctly different from other Clivias also in their time of flowering. There is not a month in the year when we do not sometimes have flowers. Price \$10.00.

C. European Hybrids. The large flowers have well rounded petals of red-orange and the wide leaves are ornamental. This is the most desirable of all Clivias. Selected fine large plants, blooming size, \$6.50. Young small plants \$2.50 ea.

Crinums. Most **Crinums** are large bulbs and plants tho a few are no larger than an **Amaryllis**.

They are very popular in the south and are a common sight in southern gardens. Among trees and shrubs they are indispensable.

Culture. *C. bulbisperrum* is hardy in the north, but there it should be planted 6" or more deep and mulched in winter. *Crinums moorei*, *Cecil Houdyshel* and *Powellii Alba* are equally hardy.

The ideal situation is among trees and shrubs, in a sandy soil but all except *moorei* can be grown in full sun exposure and in heavier soils. There should always be much leaf mould and peat incorporated in the soil—especially if heavy. The alkaline California soils need the addition of peat for growing *Crinums*. If your *Crinum* foliage becomes blotched with lighter green, as in the case where plants are infected with mosaic disease, the addition of much peat to the soil will lower the pH and probably cure the plants.

Crinums succeed in large pots or tubs but most of them require too much space for house or greenhouse growing. Tubs can be stored over winter and set outside in summer. In the south the bulbs may be planted very shallow. Keep always wet when growing.

Crinum asiaticum. Very large bulbs, plants and flowers umbel. Flowers are pure white, fragrant and resemble a spider lily. For deep south or greenhouse, in large tubs. \$4.00.

C. bulbisperrum. We have sold this as "capense," then as "longifolia" but botanists give priority to the present listed name because first given. We have *alba* and *rosea*, 50c. Good blooming size, \$1.00.

C. Cecil Houdyshel. Flowers deep rose pink. One of the best hybrids, all qualities considered. It has the same parents as *C. Powellii*. Instead of flowering only once, like *Powellii*, this hybrid has been known to give 12 or more flower scapes in one year. A large clump will give continuous bloom from spring to fall. It is hardy as far north as Independence, Mo. If planted 8" deep (to bottom of bulb) and heavily mulched over winter it has survived 10° below zero. Ralph Waldo Emerson, of Brooklyn, L.I., reports that his bulb has survived two winters and flowered two seasons. Spring is the best time to plant *Crinums* in the north. Thus they become well established before fall and are more winter hardy. Plant any time in the south.

Prices reduced. Blooming size, \$1.50. Large, \$2.00. Jumbo bulbs, \$3.00 and \$4.00 each. The jumbos are very large and require a lot of postage. They increase very rapidly and a jumbo size soon makes a large clump.

C. Ellen Bousanquet. Large, glowing, dark wine red flowers. A very beautiful *crinum*. \$1.00 and \$1.50.

C. Elizabeth Traub. Origination of Dr. Traub. It was obtained by crossing *C. scabrum* and *C. Ellen Bousanquet*. The flower color differs a little from the latter and the plant is much more sturdy. It makes offsets more freely. The culture is much easier. Those interested in *Crinum* breeding should try crossing this on *C. Cecil Houdyshel*. The latter makes a few seed and it can be done. We can not spare more than 5 bulbs; order early if wanted. A special price because of moving the planting, \$3.50. Small \$2.00.

C. Erubescens. Milk and Wine Lily. Red purple center stripe on petals. 75c to \$1.50.

C. Gordon Wayne. The first third generation hybrid *Crinum* ever raised. Flowers large pure white, in late summer. \$1.50.

C. H. J. Elwes. Pink, very beautiful. Does not make large bulbs. Small plant more suitable for pots. Tender. Med. \$3.50.

C. kirkii. One of the most desirable of "Milk and Wine" type. White flowers with red center stripe. The large umbels have many flowers open at one time. \$1.25.

C. latifolium. This species is usually known in horticulture as *C. yemensense*. The pure white flowers are very large and attractive and fittingly adorn an unusually attractive plant in June to July. \$3.00.

C. Louis Bousanquet. Very free flowering thru an unusually long season. Pink flowers on a very tall, erect scape. \$1.50.

C. Moorei. Large pink, bell-shaped flowers in the fall, freely produced. The long neck of the bulb surmounted by rotated leaves gives the plant great decorative value. Requires shade. Nearly as hardy as *bulbispermum*. \$1.00 and \$1.50.

C. Peach Blow. Exquisite large pink flowers. Free flowering from largest bulbs. A valuable hybrid. \$6.50. Probably tender.

C. Powellii alba. Extra fine pure white. One of the most valuable and beautiful *Crinums*. Small 50c. Good blooming size \$1.00. Largest, \$1.50.

C. Virginia Lee. Hybrid of two hybrids, Cecil Houdyshel x J. C. Harvey. The flowers are large, pink with a white throat. They become dormant in mid-summer and grow vigorously in cool weather. Price \$1.50.

***Elisena longipetla*.** Very rare and lovely Peruvian amaryllid. It is related to the *Ismene* but the pure white flowers are far more delicate and graceful. Culture like *Ismene*. It can be forced in pots or grown in the garden in summer. Bulbs stored over winter like *Glauds*. It is hardy in the middle south. It may be crossed with *Ismene*. \$1.50.

***Eucharis amazonica* (or *Grandiflora*).** *Eucharist Lily*. Star of Bethlehem. First collected on Banks of Rio Magdalena, Colombia, S.A. Thus are combined three Biblical names in the lore of this flower. There are 4 pure white, very fragrant flowers in an umbel with a cup in center. The beautiful evergreen foliage makes this always a decorative plant. Flowers are used in corsages and bouquets.

Culture. For pots only. We grow in 5" pots and shift to larger when too full, but crowding encourages bloom. We use exactly the same soil as for *Amaryllis*, including a tablespoonful of bone meal to a pot. Because they need abundance of water when growing vigorously and blooming, the drainage must be perfect. They are shade plants but need strong light and some sun, when growing well, to develop flowers. Keep them well fertilized with liquid fertilizer. We use Spoonit. As growing plants, in foliage, they may be transplanted and go right on growing, this is the better way. Dry bulbs start very slowly and this method will save you much time. When received, pot at once and give full shade for a week, then gradually give a little more light and finally more sun. Keep them growing vigorously for several months until offsets appear and pot is well filled. Then dry them off, giving only enough water to prevent loss of foliage. After a few weeks rest, water once or twice. If they do not flower the rest was not long enough or the growth before was not sufficient. Or you may not have given them enough sun. Experienced growers get as many as four crops of flowers in a year. *Eucharis* are tropical plants and 65° is the best minimum night temperature. Price, out of pot, postpaid, \$2.50, or f.o.b. in pots by express, \$2.50. Delivery by mail only in warm weather.

Habranthus bloom several times a year and at most any time. Culture like *Amaryllis*. After good growth, if allowed to get rather dry for a period they will usually flower after a good watering. Umbels have but one flower. ***H. brachyandrus***, lavender purple fls., 75c. ***H. robustus***, pink lavender, 60c.

***Haemanthus*.** The Blood Lilies of South Africa. So rare that few have seen them.

Culture. Hardy only in almost frost free climate like So. Calif. or Fla., if temperatures do not go below 24° at night. They do well in pots anywhere. The soil should be as for *Amaryllis*. They should have about half sun exposure. Pot with bulb only lightly covered.

Haemanthus produces red fruits containing seed. The flowers require hand pollination which may be done by rubbing palm of hand over the flower umbel when pollen is ripe. This spreads it to the pistils. Do this frequently as flowers do not all open at one time. Thus many valuable seed may be produced. Do not gather until quite red. When ready to plant, remove outer pulp and plant by pressing seed down slightly into soil but do not cover. One may plant in large clay pans and covered by pane of glass. Thus no watering may be needed until most of the seed are started. Growth begins by emergence of a radicle which will penetrate the soil. If soil is not loose, it may need help. A small bulb will form on tip of radicle and will later send up a leaf. Species are easily crossed to produce hybrids if anthers of mother plant are removed before ripening of pollen. Store pollen in advance in small stoppered glass phials, in refrigerator at 45°.

Haemanthus albiflos var. **brachyphyllus**. Short broad leaves, ciliated on edges. Small white flower in an umbel in fall. Evergreen. Plant just deep enough to hold bulb up. We have only a very few of this rare bulb at \$5.50.

H. coccineus. The true Blood Lily, altho all *Haemanthus* are known as Blood Lilies. The umbel of scarlet or blood-red flowers comes in late Aug. to Sept., after a 3 months dormancy. Two long semi-erect leaves follow the flowers and remain green thru the winter and early spring. The scape is attractively marked by red spots on a bright background. Flowering sizes, \$2.00 and \$3.00. Extra large, that should give two scapes, \$4.00.

Order now and we can deliver about June or July.

H. Katherinae has been called the most beautiful of flowering bulbs, in both foliage and flowers. The umbel of bright red flowers is often 10" in diam., often there are 125 or more flowers. The broad leaves spread from the top of a 10" stem making this a very attractive plant, for a 7" to 9" pot. Flowers usually in June or as late as Sept. In Jan. or later the green top bends over, the neck splits and a new growth emerges. Price \$5.00. Largest size, \$6.50.

H. Natalensis. A very rare bulb. They may be flowered in house or greenhouse or outside garden if weather is warm. Flowers from January to March depending on when started in to growth. We have only a very few of these bulbs at \$7.00 ea.

H. multiflorus. In general appearance, it resembles *Katherinae*. Stem heavily spotted brown. This species is ideal for pots as it is more tropical and more tender. Blooms earlier. Flowers are described by botanists as blood-red but you may disagree. This exquisite species has been sold by florists for \$25.00 when flowering. Blooming size, \$5.00.

We ship *H. Katherinae* and *H. multiflorus* as soon as safe to mail.

H. puniceus. Evergreen plant with very attractive foliage. The leaves are very vivid green, wavy edged with spotted petioles. Scarlet flowers in spring in umbel similar but smaller than *H. coccineus* and followed by red fruits. \$3.00.

Hemerocallis. **Daylily**. The flowers range in color from dark bronzy red, thru pastel tones of pink to orange and yellow. They are borne on a branching scape well above the foliage.

The Greek name, meaning "beautiful for a day," refers to an individual flower. But these are so freely produced thru a long period that "beautiful every day" would be more apt, as a collection of several sorts shows masses of flowers thruout the spring, summer and fall and here we often have some winter flowers. The modern sobriquet of "The Perennial Supreme" is well deserved.

Culture. While their beauty is their greatest recommendation, their easy culture and hardiness add to their desirability. I have known abandoned plants here, where we have arid, hot summers, to persist for years. They grow well in full sun. Slight shade is better. If given constant moisture about their roots, preserving this and coolness of the earth with a good mulch, the plants are ideally situated and respond with generosity. They are hardy, even in severe winters in the north. They are fibrous rooted, not bulbs, and must be planted at once when received. Altho they can be moved any time, it is better to ship from late fall to early spring.

Hemerocallis Araby. 30". E. (evergreen). A lovely, pastel color, with the effect of bronze on gold dust. Blooms early. 75c.

H. Calypso. Large, fragrant lemon yellow flowers. Opens in evening. 42". June-August. 30c ea.

H. Cecil Houdyshel. E. A Dr. Traub origination. A deep crimson with an old copper shade that makes it outstanding in our garden. Slight shade gives better color to flowers. 3 ft. June-July. \$1.00.

H. Chengtu. E. Brilliant coppery orange-red with carmine mid-zone. 36". July-Sept. 50c.

H. Cinnabar. E. Cinnamon, sprinkled orange and gold. 30". July-Aug. 50c.

H. Dauntless. E. Cadmium yellow. Fulvous red in mid-zone. 30". June-Aug. 75c.

H. E. A. Bowles. 48". Large ruffled flowers of deep red-orange blended with gold. Early. 50c.

H. **Evangeline**. 40". Large, rosy flowers with purple eye zone. Early. 75c.
H. **Florida**. Pastel shades. Light chrome yellow with rose blush. Darker mid-zone. July-Aug. \$1.50.

H. **Hyperion**. 36". Canary colored flowers, long straight stems. July-Aug. 75c.

H. **Iris Perry**. E. 36". July-Sept. Orange-bronze. 50c.

H. **Kanapaha**. A lovely cardinal red self, with raspberry suffusion. \$2.00.

H. **Kwanso**. The Double Orange Daylily. 25c ea. 3 for 50c.

H. **Linda**. E. Petals, ruffled golden yellow, flecked with cinnamon, and a rose zone. Sepals, pure yellow. Very lovely. June-July. 50c.

H. **Mandarin**. E. 48". Lemon yellow. July-July. 50c.

H. **Margaret Perry**. E. Brilliant orange-scarlet. 4 ft. July-August. 35c.

H. **Modesty**. 36". Large, pale, creamy yellow. Our nearest white. 50c.

H. **Nubiana**. E. Dark chocolate-red with yellow stripe in petals. One of the darkest varieties. 2 ft. 50c.

H. **Patricia**. 30". Pale yellow, large fragrant flowers. July-Aug. 50c.

H. **Purple Waters**. Rich wine, 50c.

H. **Old Vintage**. 42". E. A profuse bloomer of very deep wine colored with golden throat. May to July. \$1.00.

H. **Ophir**. A fine large, deep golden yellow. 60c.

H. **Radiant**. 42". Rich orange. June-July. 50c.

H. **Rosalind**. Famous pink Daylily. Pastel pink. \$1.50.

H. **Rosita**. E. 36". Near Carmine, tinted copper. Part shade best. \$1.00.

H. **Royal**. E. 40". Beautiful golden yellow. Fine texture. July. 75c.

H. **Royal Ruby**. All agree it is the finest red, to date. 40". July-Aug. \$2.50.

H. **Serenade**. 48". Rose on apricot cream. Faint dark overcast. June-July. 75c.

H. **Sibyl**. E. Dark red-purple petals, lighter sepals. \$2.00.

H. **Soudan**. 36". Lemon yellow. Broad, wavy petals and sepals. June-July. 50c.

H. **Spitfire**. 30". E. Fiery red with yellow mid-rib and throat, blooms continuously. Medium size. \$1.00.

H. **Vesta**. 30". Deep orange with glistening gold sheen. May-July. 50c.

H. **Vulcan**. E. 30". Darkest maroon red. July-Aug. 50c.

H. **Wau Bun**. Large apricot, sprinkled fulvous-red. The twisted and curved petals add gracefulness to its beauty. 75c.

Complete Collection. The entire list of 34 varieties are priced singly for \$27.50. They will be labelled with permanent aluminum garden labels, an added value, for \$24.75. If by express, f.o.b., we will send larger divisions.

Ismene. Their large, very fragrant, white flowers are very desirable for cutting and are seen often in florists' shops. The flowers are about the size of daffodils and because there is a cup in the center, they are often called "Peruvian Daffodils."

Culture. They are hardy only in the south. With deep planting they may be grown as far north as the Carolinas, where they should be covered by 5" of soil and well mulched in winter. Probably safe to leave in the ground in Oklahoma. In the north, plant in the garden in early spring and after frost cuts down the tops, dig and dry the bulbs well, then store at a temperature over 55°. If too cold in storage the bulbs will not flower and they may rot. Even in the south they must be covered by 4" of soil. Ismenes can also be grown in pots. See also their close relative, *Elisena*.

Ismene calathina. Type variety. 35c. Special price, \$2.00/doz. 100 for \$12.00 f.o.b. express.

I. festalis. An *Ismene-Elisena* hybrid. Pure white, no green markings. Long, narrow petals give great refinement and beauty to the flowers. No white *Amaryllid* is more elegant. The true variety, \$2.75.

I. Sulphur Queen. Hybrid of *I. calathina* and *I. Amancaes*. Light yellow. Very rare, beautiful and most desirable. \$1.00. Large \$1.50.

I. macleana. A very tiny *Ismene* on long stems. Probably the hardiest. 75c.

I. Olympia. The giant among *Ismenes* and it is magnificent. The huge flowers are

tinted yellow when first opened. Bulbs become very large and propagation is slow, hence they are expensive. Price, \$2.50, for blooming size.

I. Advance. Improved form of *Calathina*. \$1.00.

Ismene Collection. One bulb of each, 6 varieties, \$8.25.

Lycoris. Oriental Spider Lilies are natives of Japan and China. The entrancing beauty of their flowers makes them the most popular of garden bulbs in the south and very desirable pot bulbs in the colder sections. The most tender is *L. aurea*. It is hardy only in the deep south. All the others are hardy up to Va., Ky., Okla., etc. They prefer sandy fertile soil with peat or leaf mould added, plentiful watering from mid-July.

Lycoris albiflora. Large white fls. with color markings. Almost hardy. \$1.00.

L. aurea. Golden Spider Lily. One of the most beautiful of all bulbs. Not hardy except in deep south. \$1.50.

L. radiata. Red Spider Lily. Hardest of these listed above. Hardy to So. Kans. Deep coral red. 25c. 5/\$1. \$2.35 per doz.

L. squamigera, Amaryllis Halli or Magic Lily. Fine umbels of lilac-lavender flowers in August or later if planted later. Hardy in the north. Price 50c each. All the *Lycoris* delivered June-July.

Nerine. This genus includes some of the most beautiful of flowering bulbs. They bloom in succession from about Aug. to Jan. Hardy only where temperatures seldom go lower than 26°, but they are fine pot bulbs. **Culture.** Pot or plant in acid, sandy soil. Add peat or leaf mould. Pot at once with bulb covered and a little deeper in garden, in full sun. When foliage yellows, withhold water. Keep as near dry as possible when dormant. There is only one reason why you do not all buy *Nerines*. You do not know their beauty and ease of culture. Delivered late spring.

N. Bowdenii, var. Pink Beauty. Has larger, finer flowers and flowers much later, usually in late Dec. or early Jan. Multiplies rapidly yet we can seldom have enough stock to list. \$2.00 each.

N. Bowdenii, var. Magnifice, very fine improved *Bowdenii*, similar to *Pink Beauty* but flowers earlier. Extra special price, \$1.00 ea.

N. flexuosa, var. Alba. A lovely white *Nerine*. \$6.50.

N. fothergilli, pink hybrid. A lovely deep pink much admired in our garden. \$2.00.

N. rosea-crispa. Hybrid of *Filifolia* but larger in all parts. Can be kept evergreen or dried off in summer. 35c ea. \$3.00 doz.

Pancratium maritimum. Very fragrant white flowers, in shape like an *Ismene* but pure snow white. **Culture.** Simple. Plant them 4" deep and watch them grow. Hardy in middle south. 50c ea. 3/\$1.25.

Sprekelia formosissima superba. Orchid amaryllis. Deep crimson flowers in orchid-like form. Much larger than common type, better color, more flowers. Evergreen. Fine in pots. Culture like *Amaryllis*. 50c ea. 3/\$1.25. \$4.50 per doz.

S. formosissima, type variety. Similar color but slightly variable. 75c ea.

Sternbergia lutea. A small, yellow flowering, winter growing *Amaryllid*, often called "Fall Crocus." Culture like others of this type. Plant 3" deep. They are only a little short of winter hardy in the north and should succeed in protected situations in warmer sections of the middle south as far north as Philadelphia. 50c ea. \$3.50/doz. Delivery June.

Tulbaghia cepaceae. Superior clone buds are a deeper color than *violaceae* and flowers more freely. 35c ea. \$3.00 doz.

T. violaceae. Mauve flowers produced thruout the year, a true ever-bloomer. Foliage has garlic odor if bruised. An acquisition for pot culture. 25c ea. \$2.00 per doz.

Vallota purpurea. Scarborough Lily. Large funnel shaped, scarlet flowers in late fall. Slightly difficult for inexperienced gardeners but very desirable. Grow in pots same soil as for *Amaryllis* with bone meal added, and top of bulb covered by 1" of compost. We can't guarantee our bulbs to flower this fall or at any time. Suggest you feed them with Spoonit or other liquid fertilizer. They are evergreen and must not completely dry off in winter. House or greenhouse culture is advised. They are a challenge to your gardening ability. Price \$7.50. Out of pots, postpaid, or in pots (best way) f.o.b. express. We have very few and don't know where to get more.

Zephyranthes. Fairy lilies. The smallest Amaryllid, 6"-12" tall. Fine in beds or borders. Hardy in middle south. In north, dig and store. They may be grown in pots. Give acid soil, sandy loam with leaf mould or peat. Full sun or slight shade.

Z. candida. Pure white, evergreen. The masses of white flowers in late summer make them outstanding in a bed or edging for border. Half hardy and easy in pots. 2 for 25c. \$1.00 per doz. 100, \$5.00.

Z. grandiflora. The largest Zephyranthes and the best pink. It is very easy to grow. In the south, its habit of flowering every time it rains in summer gives it the name of Pink Rain Lily. 3/45c, 12, \$1.75.

Z. sulphurea. Deep yellow. 20c ea. \$2.00 doz.

IRIS FAMILY—Iridaceae

The Iris is the type genus of this family. Bearded Iris and Gladiolus are the outstanding members. Maricas are lovely and curious house plants, truly "out of the ordinary."

Tall Bearded Iris. No garden is complete without Bearded Iris. When in flower call at our gardens and pick out colors you want. **Special Offer.** If you do not care for names, we offer surplus rhizomes, 20 to 30 var., no labels, 100 for \$8.00, f.o.b. express. If by mail, send postage for 12 lbs. **Collection** of 10 fine varieties, labelled, our selection, \$2.50. 20 varieties, labelled, \$4.50.

I. unguicularis. Hardy only as far north as Washington, D.C. Bluish lilac fls. in winter. Needs partial shade. Water frequently when first planted. 50c.

I. Douglasiana, var. Watsoniana. Blue. Calif. native. Hardy in north. 75c.

Dietes. This genus belongs to the Moraea tribe, they differ from Moraea in having a rhizome similar to Bearded Iris and sword-like leaves. Flowers are very much like those of Moraea, born on long wiry stems thruout summer into winter. **Culture** like Iris. Plant early. Not hardy in north but are successfully grown in tubs that are removed to light basement in winter.

Dietes hybrid. Flowers freely in summer with a few most of the time in winter. 2" flowers on 4' stems. \$1.00.

D. iridioides Johnsoni. A robust growing plant very popular locally. Flowers are large, pure waxy white with orange and brown signal blotch and large lavender style branches. 75c ea.

Tigridia pavonia. Mexican Shell Flower. Beautiful tri-petaled flowers assorted colors. Exotically marked in contrasting colors. 3/30c. 12/\$1.00.

GLADIOLUS

How to Grow Gladiolus. Glads planted Nov. 15 to Mar. 1 in Southern California and thruout the south (a little later in Northern California and early as possible in spring in the East) are reasonably sure to escape the attack of thrips.

Thrips are very small insects that suck the juices from the plant. They cause the flowers to wither or appear burned, and appear only after weather becomes warm. To avoid the damage thrips do, four measures are effective. Plant early. Plant clean, treated bulbs. Keep them reasonably moist and well cultivated, with no weeds. Dust with Chlordane. A hand duster and Chlordane can be bought from most local feed or seed stores. Chlordane tho toxic is safe to use but do not use on vegetables. Be careful not to breathe much of the dust. It also kills ants, cut worms, wire worms, etc.

Dust Gladiolus 3 or 4 times before flowering. Begin when plants are 6" or 8" tall.

Many will prefer to spray instead of dusting. For spray use "Thripocide" which we list under "Garden Supplies," 4 oz. for \$1.20 postpaid.

Plant large bulbs (really "corms") 4" to 5" deep. Half inch bulbs, 3". Bulblets 2". Twice their diameter apart. Rows 20" apart, in full sun exposure. Best soil is sandy loam but they do very well in heavy soils, especially if leaf mould and compost is added. Alkaline soils do not produce good Gladiolus. Correct them by addition of peat or leaf mould. Use only well decayed manure, if any. Spoonit is an excellent mildly acid fertilizer.

New All American Glads. Every garden should have these new Glads as well as the older varieties. We have four new 1959 introductions for this Fall.

Sparkler. 1959. Yellow with red throat.

Joyous. 1959. Bright ruffled rose.

Emperor. 1958. Royal Purple with cream throat. Robust grower.

Maytime. Stunning pink with white throat. Ruffled, very tall.

Royal Stewart. A he-man red, straight with 8-10 open at once.

Appleblossom. White with rose-pink edges. A real beauty. Easy grower.

Landmark. Huge ruffled cream.

Little Pansy. Miniature violet with pansy face.

New Prices. 35c ea. 3 for \$1.00. 12 bulbs \$3.45.

K and M Butterfly Gladiolus. New. Small dainty ruffled flowers. Very popular for picking for the house.

Elf. Apricot, scarlet throat on yellow blotch, frilled.

Remy. Sulphur yellow, crimson carmine blotch.

Rendezvous. Clear orange scarlet.

Summer Fairy. Reddish salmon, reddish maroon throat.

Prices. 2/30c. 12 for \$1.50.

Betty Duncan. Late. Very nice deep orange. 10c ea. 75c doz. 100/\$6.00.

Capeheart. Early salmon rose pink. 6c ea. 60c doz.

Edgewood. Ruffled medium rose. 8 open on a tall spike. 10c ea. \$1.00 doz.

Elizabeth The Queen. Ruffled lavender. One of the most beautiful. 10c ea. 90c/12.

Friendship. Early. A lovely, ruffled soft pink with a cream throat. 10c ea. 75c doz.

Gold. Rich golden yellow. One of the best. 10c ea. \$1.00 doz. \$7.00/100.

Greenlight. The pale green of this flower with darker green of buds make a striking Glad. 15c ea. \$1.50 per doz. 100, \$9.75.

H. B. Pitts. Very fine large orange pink. 7c ea. 70c doz.

King David. Deep purple, velvety red throat, light Picotee edge. Heavily ruffled. 8 to 10 open. The finest of this color. 10c ea. \$1.00 doz. 100/\$7.00.

Prof. Gourdriaan. A very good white. 10c ea. \$1.00 doz. 100, \$7.00.

Red Charm. Pure med. dark red. Opens 8 to 9 at one time. 7c ea. 70c doz. 100, \$6.00.

Violet Charm. Light violet with a broad deep violet arrow on a cream throat. 10 open on 22 bud spike. A truly super quality glad in all respects. 10c ea. \$1.00 doz. 100/\$7.00.

Assorted Varieties. Good flowering size, 60c doz. 100/\$5.00.

Miniature Gladiolus. Like a miniature carving, a cameo or fine lace, they are dainty, beautiful and alluring. Fine for cut flowers. All are good blooming size bulbs. **Assorted Colors,** \$1.00 doz.

Tristis concolor. Evening Flower. The fragrant glad. Sweet, spicy fragrance in the evening. Creamy white. 15 to 18 inches tall with three to five flowers on each stem. Where climate permits they should be left undisturbed for several years. To be effective they should be planted in clumps. 3 for 65c. \$2.00 per doz. Summer delivery.

Neomarica or **Walking Iris** are tropical and are favorite house plants for their unusual habit of growth.

Neomarica gracilis. Smallest and earliest. Use 5" pot. 75c.

N. Northiana. Larger plant and flowers, slow propagator. Use 6" pot. \$1.75.

N. hybrids. We crossed the above species and raised plants with flowers as large as **Northiana**, as profuse as **gracilis** and plants midway in size. They are rapid multipliers. \$1.75. All 3 kinds for \$3.75.

LILY FAMILY — Liliaceae

The type species is *Lilium*, or true Lily. Many call *Crinum*s, *Callas*, *Cannas*, or any bulbs "Lilies," but this is an error.

Lilium auratum platyphyllum. Gold Band Lily. \$1.25. **L. Golden Clarion.** \$1.10. **L.**

Red Champion. 75c ea. We have a few of these, you may have one of each for \$2.50.

Gloriosa. Climbing Lily. The flowers resemble true lilies but surpass most of them

in their gorgeous beauty and high coloring. They propagate by tubers instead of bulbs. The stem is branching and heavy and must be supported. Small tubers flower but the larger ones will give 2 or 3 times as many. They also make larger, more showy plants.

Culture. They must have the good drainage of very sandy soil, to which it is advisable to add peat liberally. Leaf mould will do, but it is not quite as good. If soil is heavy, dig out to a depth of 1 ft. and fill with 1 part top soil, 3 parts coarse sand and the peat. Plant tubers as soon as weather is quite warm in a horizontal position, 3" or 4" deep and mix a liberal portion of peat with soil close to tubers. Gloriosas prefer full sun exposure but will do well in slight shade. They like heat and abundant moisture. Lack of either will slow them down. We recommend only outdoor culture.

Gloriosa rothschildiana deserves the name **Glory Lily**. Very vivid colors, red with yellow markings turning later to deep red, in a true lily form. Flowers are long lasting and are used in corsages. Plant 4 ft. tall. Prices, small blooming size tubers, \$1.00, larger sizes that produce larger plants and more flowers at \$1.50, \$2.50.

G. carsoni. We imported these from India last year. Tall, claret and yellow. \$1.50

OXALIS FAMILY — Oxalidaceae

Because of their masses of bright, colorful flowers, the ease of their culture and the insignificance of their cost, Oxalis are favorite with many gardeners. They are so varied in form that they appeal to the collector also. The winter growers are most cheerful pot plants and the summer growers make bright, interesting borders or beds of low plants. Here they will make a solid bed of color, enduring for many weeks.

O. crassipes. Tuberous. Bright rose flowers. Evergreen and everblooming. Tuberous rooted species start slowly. Keep moist. 15c ea. \$1.25 doz.

O. brasiliensis. Bright magenta fls. Starts growing in winter and continues to late spring. Bulbs 35c.

O. lasiandra. The prettiest summer Oxalis. 5 to 10 leaflets. Bright rosy crimson flowers. 2 for 15c. 75c doz.

O. Assorted Summer Growers. We have a number of varieties that the labels have been lost. 25 for \$1.00.

THE CALLA LILY FAMILY — Araceae

This family contains the so-called Calla Lilies or Zantedeschia, Fancy Leaf Caladium, Sauromatum, Amorphophallus, Arum, Drunculus, Anthurium, Spathiphyllum, etc. All are shade plants and need acid soil.

Zantedeschias are not true Callas, tho this is their common name. **Culture.** Colored Callas, Zantedeschia elliotiana and Z. rehmanni elegans may be potted or planted in the garden in almost frostless deep south. If the rest period, when the enzymes of bulbs and tubers are changing the stored starch into sugar, is too short, planting in cold wet soil may cause them to rot. When a bulb, corm or tuber is ready to grow, there will be root knobs on the base and top growth started.

A soil of peat and enough coarse sand to feel very gritty, as described for Amaryllis is good for most of the Araceae. Note exception as to Anthuriums and Spathiphyllums. Fertilize with Spoonit or manure water. In pots, cover only 2" but in the ground in Calif. or the deep south, they may be planted about 3" deep. They need about half shade. Keep barely moist until growth is well started, then water freely. Cool temperatures suit them best. Hardy outdoors in S. Calif.

Zantedeschia albo-maculata. Spotted-leaf Calla. The prettiest foliage of all and worth growing for that alone. Endures sun best. Flowers, creamy white. 50c each.

Z. rehmanni elegans. Improved light pink form. 45c each. 3/\$1.25.

Z. elliotiana. Deep golden yellow. If not given enough sun they become tall and spindling and fail to flower. 35c ea. 3 for \$1.00.

Amorphophallus revieri. Sacred Lily of India. **Culture** like Zantedeschia. The tubers may be stored dry and allowed to flower before potting or planting. We have blooming size tubers for \$5.00 ea. Smaller tubers for \$2.50 and \$3.50. Sm. \$1.00 ea.

Sauromatum venosum. Lizard Lily. The long, serpent like spathe wriggles along on soil surface. I've seen persons jump, at their first look. Soil and culture similar to Zantedeschia. Large tubers, \$1.50 and \$2.00. Medium, \$1.00.

S. nubicum. Rare, collectors species. \$3.50.

Voo Doo Lily. *Arum cornutum* or *Sauromatum guttatum*. Something different. Spotted stem, attractive cut leaf, long narrow maroon flower with yellow spots. 50c ea. 3/5\$1.40. \$5 doz.

Helicodicerus muscivorus. Twist arum. A curiosity. Blow flies like its "fragrance." The flower spathe is contracted in the middle and bends at a right angle and opens in an 8" or wider flower. Pale purple, covered by long white hairs, the tube spotted. Summer flowering. Hardy in deep south. We have very few tubers and must price all sizes at \$2.50.

Anthurium are everblooming if given correct conditions at all times, but sometimes take a vacation when very hot, very cold or very dry.

Culture. Anthuriums and Spathiphyllums are tender tropical plants, suitable only for pot culture. **Soil formula.** They will grow in most any organic compost. We use and advise one part old osmundine (discarded from orchid pots, new will do); one part peat. Add enough Sponge Rok or coarse sand to make compost very gritty and to hasten quick drainage. See Potting Directions under General Culture. Add a thin layer of sphagnum on surface to prevent eroding the surface when watering. Set plant low in an oversized pot and as it grows, new roots are formed on compost surface which should be covered with more sphagnum. When compost surface reaches rim of pot, shift to larger pot, or build up with sphagnum. New roots must be kept covered.

Use Spoonit or liquid manure once a month, after plants are well established. The preferred minimum night temp. is 60° or over. 45° does little harm other than to stop growth and flowering. 70° to 80° is a good daytime temp. Air should be very humid. Spraying foliage daily increases air humidity. They should never become completely dry, thruout. Water about every two days. **Special price.** Small plants for \$2.50.

A. scherzerianum. This species is easy to grow as a house plant as it is less demanding about temperature, etc. Mature, old plants may become 15" to 18" tall, but they start blooming at only 4" or 5" tall. Colors range from red, spotted red and white, to white. Blooming size, assorted colors only. We are offering small plants this year for \$1.50.

A. sandens. A trailing plant with foliage resembling the common Rubber Plant but smaller, with aerial roots emerging from each node. Flowers are very small, green and insignificant, but the cluster of seed berries that follow are like pearls and hang on for a long time. They are white or lavender and are very decorative. This plant may be used as a hanging plant or trained on a totem pole. An ornamental plant. Small \$1.00.

Fancy Leaf Caladiums are the most gorgeous of foliage plants. Every leaf is a flower as vivid in color as a rose. We have selected for you 10 of the most beautiful, we think, this year. **Culture.** The Caladium is a tropical plant and naturally grows best in very warm temperatures, 70 degrees or more. They are heavy feeders and seem to grow best in a soil with a pH of 5.5 to 6 and with sufficient organic matter to prevent its packing and sealing to the point of locking out air circulation. The pot soil should be loose and fluffy even after continuous and frequent watering during the growing period. A mixture of equal parts of coarse sand, peat or leaf mold, and dairy manure has been found satisfactory. Caladiums should be started in moist soil, or peat. After roots have started more water should be used. As the plant develops and the leaf area increases, more water is thrown off by the leaves and more water will be required, but the soil should never contain sufficient water to "water-log." Constant watering will tend to leach the plant food from pot soil so it will be desirable to feed the plants periodically. Use Spoonit for a good fertilizer.

The popularity of these spectacular foliage plants has grown in recent years. They provide breath taking beauty in the garden or indoors for several months. We have new varieties for your selection this season. Some listed for the first time.

- Ann Greer.** A large round leaved red. Medium leaf producer. Low growing.
- Bing Crosby.** New. Large white heavy textured leaf, red veins with forest green border. A strong grower.
- Coral Glow.** Deep coral pink center, midriff and veins, giving way to wide mottled green border. Low growing.
- Fire Chief.** New. Brilliant deep rose center, light green border with rose splashes, black stems. Very good.
- Frosty.** New. A myriad of white flakes on an olive green background with dark pink veins and midriff. Heavy leafing and low growing. Excellent for potting.
- June Bride.** The whitest of the whites. It is low growing.
- Lady in Pink.** New. Beautiful dark melon pink leaf with slightly darker pink veins and midriff, Christmas green narrow border. Low bushy plant, slightly transparent.
- Mrs. F. M. Joyner.** A very colorful new white. Red veins and border, vigorous.
- Pink Blush.** New. Slightly waxed frosted pink leaf, moss green veins and dbl. line border with netted green lines throughout, slightly transparent. Low bushy plant, gorgeous.
- Scarlet Pimpernelle.** A vigorous low growing variety that is rapidly increasing in popularity.
- Sorocoba.** Has a suffusion of delicate pink over white. A good leafer.
- White Queen.** New. White to grey background, vivid lipstick red veins, netted with green lines throughout and double green line border with white between. A splendid pot plant.
- Prices.** 50c ea. or complete set of 12 for \$5.40. These are No. 1 bulbs labelled.
- Caladium Lance Leaf** varieties. These are new varieties with narrow pointed leaves. Very beautiful.
- Cinderella.** A white lance leaf with occasional green mottles and vermilion splotches. Interlaced with minute pink dots, lots of leaves. Very beautiful.
- Little Rascal.** Low growing heavy textured leaf. Very rich wine red color. Beautiful beyond description.
- Pink Charmer.** Medium lance, bright soft pink ruffled edge soft green border. Excellent.
- Red Chief.** Big wide upright bright red lance leaf. Very good.
- Rosalec.** Lots of softly ruffled crimson leaves, narrow green border.
- White Wings.** Large medium wide leaf, creamy white with unusual wide lobes at base of leaf. Tall upright grower.
- Prices 50c ea. 6 for \$2.85. One each of 18 var. \$7.95.

THE GESNERIA FAMILY — Gesneriaceae

The Gesneriads listed here are tropical or semi-tropical. They are strictly house plants outside of the tropics. Most of them are for the warm house. All are either tuberous rooted and deciduous or fibrous rooted and evergreen.

The American Gesneria Society, % Mrs. John F. Darsow, Secy., 3749 Linders Dr., Palo Alto, Calif., publishes much useful information on this family. For cost of membership and other useful information please address the Secretary. The Gloxinian, Gray, Oklahoma, supplies much useful information.

Culture. The soil may be one part by volume of sharp, coarse sand and 2 parts peat or peat and leaf mould. Add 1 tablespoon bone meal for a 6" pot. Mix thoroly. Set tuber a little under soil surface concave side up and mulch with ½" wet sphagnum. Last of all water until a little runs thru at bottom. These are tropical plants. The best starting temperature is at least 80°. They will start, but a little more slowly at 70°, with 60° or over at night. Keep soil moist and they can be in full sun until foliage appears, then slightly shaded. The plants need good light and more sun than most Gesneriaceae. Leggy plants result from insufficient light. The secret of producing good Gloxinia is in frequent feedings of nitrogen will result in heavy vegetative growth. We use Spoonit.

Gloxinias. Improved. California grown, 1½" to 2" tubers, in the following sorts: **Blanche de Meru**, rose, white throat; **Brown's Red**, fine flexible leaved variety; **Emperor Frederick**, scarlet, white border; **Emperor Wilhelm**, purple, white border; **Etoile de Feu**, scarlet; **Mont Blanc**, pure white; **Princess Elizabeth**, blue, white throat; **Tigrina**, from light rose to dark lavender, characteristics are the small tiger spots; **Violaceae**, soft violet. Price 40c ea. 6 for \$2.00, if all one kind or assorted and in one bag. Complete collection, labelled, \$3.10.

Gloxinia Seed. We have a very good mixture of seed, 50c packet, 3 for \$1.25. Please send stamped addressed envelope for seed.

Seed Culture. Place fine grained vermiculite or terralite in the bottom of a plastic refrigerator dish 3" to 4" deep and moisten well. Plant seed very thinly over surface. Keep covered with lid until plants are ready to pick out. One must make sure that moisture does not escape and add water if it does. They may be picked out and transplanted into 2" pots after second pair of leaves develop. We also plant seed in 9" pans, half filled with peat and milled sphagnum. When planted cover pot with glass. We grow many rare seeds by either method, including African Violets. Gloxinias flower at about 5 months.

Episcias resemble African Violets in form and in other ways, yet are entirely distinct. African violets flower profusely. Episcias are very showy foliage plants but have brilliant, usually red, flowers, not so freely produced. They are natives of the American tropics, not African. Their flowers are solitary or clustered, not in cymes as in African Violets. The resemblance is casual, not botanical. But their red flowers and general contour of the plants have resulted in promotion of *E. fulgida* (often sold as *E. coccinea*) as a Red Violet. They are very tender tropicals and should not be colder than 60°. At about 50° they are badly damaged or killed, hence cannot be shipped when likely to encounter temperatures under 50°. They make stolens or runners like a strawberry and new plants are made in a similar manner. We plant in baskets of sphagnum and hairpin the little plants on stolens to sides and bottom of basket. Or stolens may be allowed to hang as jewelled pendants. Flowers are usually bright scarlet and foliage usually villous, or hairy and velvetlike. They may also be grown in pots, same soil as African Violets. Either way they require constant moisture. When you receive the plants do not remove or tear apart the mass of sphagnum which contains their delicate roots. Plant the entire mass.

E. Acajou. Dark bronze with wide silvery green midrib. \$1.00.

E. Chocolate Soldier. Dark chocolate with narrow silver midrib. \$1.00.

E. Emerald Queen. Dark green with silvery green midrib. \$1.00.

E. Frosty. Prevailing color is the frosty green, spreading to leaf margins from the center and toward the margins are markings of dark green. \$1.00.

E. Harlequin. Very shiny leaves, wide green zone along midrib with very dark greenish bronze between pinnae from the midrib. \$1.00.

E. dianthiflora. This is a vigorous grower with small green leaves and white flowers with fringed petals in spring and summer. \$1.00. One each of the above for \$10.00.

E. metallica ("Kitty"). Leaves densely covered by short hairs, or villous. Very dark bronze with silvery pink center stripe in midrib. Reverse side, vinaceous purple. \$1.00.

E. Silver Sheen. Silvery green leaves, narrowly bordered dark green. \$1.00.

E. Sylvan Beauty. Green central zone with greenish bronze on outer portion. \$1.00.

E. Splendens. (Variegata). Silver green markings on emerald green background. This is the last of cupreata cultivars. \$1.00.

E. cupreata, var. viridifolia. Nile green leaves. The best bloomer of all. \$1.00.

E. fulgida. (Coccinea, Red Flame Violet). Medium bronze with silvery green veins. Lovely red flowers—but not a "violet." \$1.00.

E. lilacina, type variety (Fanny Haage). Large lilac flowers. Broad green center on greenish bronze background. \$1.00 each.

Special our selection, one each of twelve plants for \$9.00.

Columnneas. Are epiphytic climbing vines, having large, vivid red flowers. They may be grown in pots, soil similar to that of other Gesneriads but we prefer to grow in wire baskets of pure sphagnum or with the center of sand and peat, equal parts.

Columnnea gloriosa. The most profuse bloomer. **C. Schiedeana**, very large, thick stems. **C. microphylla**. **C. Banksii**. **C. Allenii**. **Araguda**. \$1.25 new low price. One of each for \$7.00.

Aeschynanthus (Trichosporum). This is a nice trailing, almost woody vine. In nature, they are epiphytal and climb trees. The plants are attractive and the freely produced large flowers are tubular and vividly colored.

They are tender tropicals and shipment will be made only when weather permits. We grow them in wire baskets, lined thickly with sphagnum and with peat and sand in center. They do well in pots. They require constant moisture. Leaves and flowers drop when dry.

Aeschynanthus lobbiana has scarlet fls. in a purple calyx. \$1.25 postpaid.

Achimenes have been popular plants for a very long time. They are not too hard for the average amateur. The plants and the flowers are diverse in size and form and one should plant a number of varieties.

Culture: From 1 to 5 tubers may be grown in a 5" pot. We grow them entirely in wire baskets and this seems to us to be the perfect way. We use 16" baskets but for amateurs we recommend 10" baskets rather than larger or smaller. For only 2 or 3 it is all right to use pots or 8" baskets. Some commercial growers use gallon tin cans.

The compost in posts may be the same as for Gloxinias and other Gesneriads. In baskets we line them first with sphagnum and fill center with fibrous peat. It would probably be better to use equal parts of peat and coarse leaf mould. Some sand can be added.

The name is said to mean that they do not like the cold. This may be fanciful but is nevertheless true. They like warm days and nights. A good temperature will not be under 60° at night and up to 80° daytimes, and higher does not hurt them. Protect them from winds or even strong drafts. It dries them out too much and the compost should never become dry. They need about the same sun exposure as Gloxinias.

Achimenes. Adele de la Haute. Large fls., shell pink blending to carmine center. **Andersoni.** Deep pastel blue. **Camille Brozzoni.** Pink lavender, Sm. fls. in profusion. **Edmond Boussier.** Improved. Purple striped, yellow center. **Ghiesbreghtii.** Large, tubular red-violet. **Loveliness.** Violet fls. late, very profuse bloomer. Dwarf habit. Rightly named. **Miniata.** Cherry red to carmine. Early. **Purple King.** Petunia violet. Early. Vigorous. **Violetta.** One of the loveliest of all. Very large violet toned fls. **Vivid.** Cerise. Good flowering. **Prices.** 25c ea. 3/60c. One of each, 10 for \$2.00. **Assorted.** 15 for \$1.00

Nautilocalyx bullatus. Close relative of *Episcias* and as tender. Upright grower to 1 ft. or more. Quilted leaves of dark bronze-green, maroon on underside. Same soil as for above. A very gorgeous plant. \$1.25.

N. forgetii. Erect, robust, well branched plants with yellowish leaves stained olive-green along the ribs and purple beneath. Cream flowers. Rare, a beautiful house plant. \$1.00.

Smithiantha (Naegelia) are fine, tuberous rooted, foliage plants. The rounded cordate leaves are covered by soft hairs that give a velvety appearance and cause them to change colors when viewed at a different angle. The showy flowers are long, tubular and in pink and orange shades. Minimum temperature 60° for best growth. We grow in pots in soil as advised for Gloxinias. They should not be too deeply shaded nor ever become dry. We offer dormant tubers delivered about early summer usually. The dormant period is somewhat variable. They must be planted at once when received.

Smithiantha cinnabarina. Gorgeous dark red velvety leaves, cinnabar red flowers. **S. hybrida, Orange Delight.** Foliage mottled red brown. Flowers orange outside, yellow, spotted orange inside. **S. Zebrina**, the leaves are mottled and veined red brown. Special price 75c ea. 3 for \$2.00.

AFRICAN VIOLETS — Saintpaulias

Few would question the statement that African Violets are the most popular house plant at the present time. They fit perfectly into the modern smaller homes and rooms, where things are fixed or built in. Every convenience in a small space. They may

be grown in an east, south, west or north window or even the basement if given artificial lighting and correct temperature. See under Garden Reference Books the new book, *Growing Plants Under Artificial Lights*.

They win favor because of their daintiness and beauty, their everblooming habit, their diversity in foliage, flower color and form. The introduction in 1955 of double pink varieties, for the first time have enhanced their popularity. There seems to be no limit to their possibilities in the hands of breeders, except that their color range can never include yellow or true spectrum red. The reds are always purple toned.

Culture. The question most often asked is, "How can I get constant bloom? My plants are healthy and grow luxuriantly. The foliage is deep rich green, beautiful plants but no flowers." The answer is, you do not give them enough light. Note the discussion under **Sun exposure**.

The advised **range of temperatures** for winter is 60° at night and 70° daytime. They might do a little better at 10° higher but that is uncomfortable for people in winter clothing and summer brings about 10° increase, in our living rooms.

The plants do not like sudden changes nor great changes. A nearly even temperature, within a limit of 12° between high and low is better. They are bound to have a greater range sometimes and if not more than about 15°, they are unlikely to lose their flowers. Loss of flowers is the first evidence of something wrong. This may result from sudden changes, drafts, too high a temperature in summer and in winter it may result if temperature goes much under 60° for more than an hour or two. Or it may result from too low relative humidity. This should be 40 to 60%.

African Violets grown at a congenial temperature are usually killed if subjected to lower than 40°. Therefore it is impossible for us to send you plants by mail in winter, to a cold climate. In favorable weather we can usually send to warmer sections of the south. Nor do we ship on very hot days in summer. We can ship leaves by air in winter but you must send extra for air mail.

Watering. Do not use cold water. The water should be near the room temperature and never over 10° lower or higher. Most of our watering is done by spraying with a hose. The plants need to have the foliage sprayed and it does not spot the foliage if no sun falls on the foliage before they dry off. The interval between waterings should be long enough to permit the top soil to become slightly dry. Do not use pots that have no hole at bottom for drainage. Use sub-irrigation infrequently. We prefer regular pot watering.

Good ventilation is needed by all plants but Saintpaulias do not like drafts. Slow movement of air currents are more conducive to their comfort.

Soil formulae. Plants have a considerable tolerance and do well in a wide variety of soils. Soil should be at least mildly acid in reaction and a type that will drain easily and quickly. Heavy clay soils, therefore, are not good. We use about one half compost, one half peat with enough Sponge Rok to give good drainage.

Fertilizers. We use Spoonit and recommend it to be applied once a month, on a day following watering. See our listing under Garden Supplies.

Sun exposure. Lack of sufficient light intensity is one of the most frequent causes of non-blooming. All shade plants need a certain amount of modified sunlight to make them flower. In the winter, the sun is at a low declination. Its rays must pass thru several times the thickness of atmosphere penetrated at noon in the summer when the sun is directly above or at "high declination." Very little shading is needed on the greenhouse in winter. Treated thus, our plants bloom profusely all winter. Very likely plants in a south window, anywhere in the north temperate zone, in winter, will be sufficiently shaded on the brightest days by a thin muslin curtain. It may not even be needed at all and on days of less than maximum intensity remove the shade.

But summer sun is much stronger. One must give more shade. It should not, however, be too heavy. The color of the foliage will tell you what they can endure.

When healthy plants have light, yellowish foliage they probably receive too much sun. For checking, select a plant having green foliage, under normal conditions, not a dark foliage plant like Holly or Pink Delight nor one like Frosty having ivory or white areas.

If your Saintpaulias do not flower altho they grow well and appear to be healthy, you need to check on all points we have mentioned. Light intensity and duration are important. In the far north we have customers near the Arctic Circle where there is full daylight only in summer. Here the only possibility of winter flowers is the use of artificial light. They express interest in fluorescent lighting. Mrs. Rector, in How To Grow African Violets (which you should have,—see our book list,) says that an 80 watt fixture, 18" above the soil, has been found to give good growth and free flowering. Any kind of light will do provided the plants receive 15 to 30 foot candles (as measured by a photographic light meter) for 12 hours duration, daily. This should be tried in the Northern states where winter days are short and dull. For the most complete information on this, send us \$3.50 for Peggy Schulz' book, "Growing Plants Under Artificial Light."

Humidity. The humidity of our homes is likely to be not much over 25%. One can increase the humidity around the plant sufficiently by setting the plants in saucers. These may be partly filled with small gravel. Set pots on top of gravel and pour in water until it does not quite touch pots. A saturated sponge in a shallow dish will help humidify air. If you have a greenhouse, keep the walks wet.

Pests. Be sure to keep your plants free of insect pests. One of the most common on house plants is the **mealy bug**. Examine plants frequently for pests. Mealy bugs look like tiny specks of cotton. Isotox M, used as a spray, is effective. Use 1 tsp. to one gallon of water. Badly infested plants should be discarded or at least removed from the vicinity of all other house plants. All effective insecticides are poisonous. You must not breathe the fumes. You must avoid skin contact. See our listing.

Cyclamen mites are most destructive. The center of an infected plant takes on an abnormal appearance and changes to a different color, usually grey. It becomes rough in appearance and young foliage is misshaped. Mites spread to all the plants and effective measures must be at once applied. We have found the most effective remedy is to spray with Isotox Spray, which is listed under "Supplies." Immediately remove infected plants into quarantine. Do not handle infected plants, then healthy plants.

Orders from distant states, Hawaii, Alaska, Cuba, Europe, etc., should include enough for delivery by Air Parcel Post. We have shipped as far as Denmark, nearly 6,000 miles, this way and plants arrived in perfect condition. They did not quit blooming. We charge the customer the excess of Air Parcel Post above the cost of surface Parcel Post to our 8th Postal Zone. Please state in your order that you will pay the difference promptly if your estimate is too low. But send your estimated amount with order.

Starting leaf cuttings. A good many growers start cuttings in water. We believe a better way is to start in terralite, (a fine grained form of vermiculite), keep moist and in good light but no sun. Long distance shipments should go by air, the same as for plants. If leaf is wilted, soak 2 hours in water or until leaves are fresh looking.

We have a number of new varieties to offer this spring both in plants and leaves. Some are in small quantity, so please give us a few substitutes or tell us we may substitute. We always send something just as good or better.

Sales Tax. Californians must include 4% Sales Tax. Out of state customers sending plants as presents to a California friend must also pay it. Please read "Terms and Instructions for Ordering," and comply on all points. Orders \$3.00 or under please add 50c to help with postage and packing.

Alaskan Waters. Double blue, supreme foliage. \$1.25.

Amanda. Bright dbl. ember pink blooms, very large, on dark green foliage. Outstanding for color and plant pattern. Small \$1.00. \$1.50.

Angel Flake. New. Large ruffled white faint lavender pink edge. Slightly ruffled light green pointed leaf. \$2.50.

April Love. Delicate blue and white frilly dbl. Dk. bronzy girl fol. \$1.00 sm. \$1.50.

Blue Crepe. Red underside, dark green, wavy leaves. \$1.25.
Blue Peak. Double blue flowers, edged white. Geneva type. \$1.25.
Cara Mia. Outstanding double blue and white. Supreme foliage. \$1.25.
Cerama. New. Much admired. Deep rose center, almost white edge. Sm. \$1.00.
Clarissa Harris. Olive green, red back fringed lvs. Fringed deep pink. \$1.50.
Cloud Fringe. Very pretty foliage. Semi-double to double dk. blue, \$1.50.
Constance Hansen. New. Lovely soft shade med. blue frilly dbl. Bronzy black ruffled fol. Red beneath. \$1.50.
Cydonia. Dark leaves. Semi-double dark purple flowers. \$1.25.
Desert Glow. Bright raspberry red. \$1.25.
Dorothy Gray. Beautiful full, creamy pink dbl. with chartreuse edge. \$1.50. Sm. \$1.00.
Dbl. Peach Blossom. Dark quilted leaves. Peach-blossom dbl. \$1.25.
Dbl. Rose Wing. Full dbl. version of the old favorite, giant blooms in profusion on dark green fol. Another beauty. \$2.00. Sm. \$1.00.
Dbl. Ruffled Queen. New. Small only \$1.00.
Dbl. Uncle Bob. A very good dark pink double. \$1.25.
Ember Dream. Bright raspberry red semi dbl. on dark quilted fol. \$1.50. \$1.00.
Fair Elaine. White with green edge. Wavy foliage. \$1.25.
Fancy Free. New. Large double pink. Dark green leaves. \$2.00.
Finesse. New. Finest Peachy Pink yet. Huge full dbl. frilled blooms that open like a tea rose and flare into a beautiful large bloom. Profuse and very good dark green tapered foliage with grown stems. \$2.50.
Fuchsia Bride. New. Bright fuchsia, large fls. Semi dbl. on bronze girl fol. \$2.00.
Gibson Girl. Exceptionally deep purple giant blooms, white edge. \$1.50. Sm. \$1.00.
Good News. Giant very full deep pink double with dark eye. \$1.50. Sm. \$1.00.
Green Froth. Bright green wavy foliage topped with white frilled flowers. Lower petals heavily edged in green. \$1.25.
Hugonaut. Dbl. purple fls., white edge, long tapered bronze fol. \$1.50. Sm. \$1.00.
Jeweltone. New. Large delicate lilac white full dbl. Frilly blooms on dark green girl foliage. Chartreuse edge. \$2.50.
Kathy Jean. Glossy ruffled foliage of deep black-green. Dainty frilled fls. of soft lavender with chartreuse edge. \$1.25.
Kimberly. Dark green wavy foliage, red underside; large, dbl. light blue fls. white edge. \$1.50.
Legionnaire. New. Giant dark blue geneva cupped fl. on dark green fol. Most profuse bloomer yet. \$1.50.
Lingo. Lovely dark wavy foliage. Fl. frilly two-toned lavender. dbl. \$1.50.
Masquerade. Upper two petal groups have black edge, deep purple eye, shades of mauve, pink, white on black wavy fol. \$1.50.
Matchmate. Light blue geneva double dark foliage. \$1.25.
May Melody. Frilly med. blue full dbl. on waxy semi-spooned dk. gr. fol. \$1.50. Sm. \$1.00.
Minnetonka. Dbl. blue and white. Very good flowering var. \$1.00.
Ohio Skies. Large light blue flowers well above plant. Supreme fol. \$1.00.
Peach Chiffon. New. Giant wavy bicolored rich peach colored dbl. fls. in profusion. \$2.00.
Pink Camellia. Light pink double. Dark supreme leaves. \$1.50.
Pink Monarch. Very large med. pink flowers in abundance. Semi girl fol. \$1.25.
Pink Petticoats. Fringed deep pink single. Dk. bronzy lvs., red back. \$1.25.
Pink Puff. Lovely double pink, very large fls. Quilted leaves. \$1.50.
Pink Vixen. New. Very large deep pink flowers with darker center. Sweetpea type. Slightly ruffled. Deep scalloped girl fol. \$2.50.
Pride of Rochester. Lovely light pink, large dbl. \$2.00.
Priscilla Laudaker. New. Most beautiful ruffled semi to double white flowers, upper petals green. Girl fol. \$2.50.

Rose Wing. Fused rose and white on medium heavy foliage. \$1.25.

Santa Maria. Very pretty dark quilted leaves. Powder blue ruffled single. \$1.00.

Sea Foam. Frilly blue and white full dbl. in profusion on dark gr. holly type foliage. Very good. \$1.50. Sm. \$1.00.

Shag. Brilliant wine bicolor full frilly dbl. on bronze waxy fol. \$1.50. \$1.00.

Starmaker. New. White with lavender radiating from center. Very dark green leaves. \$2.50.

Star Pink. Huge upright deep pink star fls. Black green fol. \$1.00.

Snow Ball. Free flowering double white with quilted leaves. \$1.50.

Spotlight. Very large pink with very dark center. Fls. rather long. \$1.50.

Torchy. Deep rose almost red. Small \$1.00.

TV Swirling Petticoats. Deep purple single. Lvs. very frilled. \$1.50.

Vicki Ann. Light pink, medium double. Oakleaf foliage. \$1.50.

White Goddess. Lovely pure white, cupped blooms with heavy frill, on dark green girl foliage. \$1.25.

White Pride. One of the best white doubles. \$1.00.

White Puff. Very pretty frilled white double. Light green leaves. \$1.00.

Winged Beauty. New. Deep lilac frilled cup shade blooms with wavy white edge, on dark green girl fol. Everybody likes it that sees it. \$2.50.

Wintry Rose. Dbl. wine and orchid with wide white edge. Excellent bloomer. \$1.25.

Beginners collection. Our selection. 2 for \$1.75. 3/\$2.50. 4/\$3.25. 5/\$4.00.

Flower Pot Tree Stand, black, sturdy, with saucers to hold 13 pots. \$8.75.

Flower Pot Tree Stand with metal saucers to hold six pots. Table Model \$5.00. Brass, \$6.50. Table Model **Flower Pot Tree Stand**, brass will hold 18 pots, \$14.75. For mailing and packing add \$1.25 for each.

Leaves, 50c ea. \$5.00 per doz. If you want them by air mail please send \$1.00 for postage and packing. If special delivery add 45c. Please give a few substitutes, if you do not, we will substitute with as good or better varieties if necessary. Dbl means double, b blue, p pink, w white. Many new varieties in this list.

Amanda, dbl rose

Angel Flake

April Love, dbl

April Mist

Autumn Moon, dbl b

BeauKay

Bernice Sup., dbl b

Black Cherry Sup., dbl r

Blaze

Blooming Fool

Blue Crepe, dbl b

Blue Duet

Blue Peak Sup., dbl

Blue Pom

Candy Lace

Cara Mia, dbl

Centennial Sweetheart

Cerama

Charm Song

Cherry Ice

Clarissa Harris, p

Cloud Fringe, dbl b

Constancia

Dapper Dandy

Dorothy Gray

Dbl. Clarissa Harris

Dbl. Hoosier Sup.

Dbl. Holly

Dbl. Peach Blossom

Dbl. Rose Wing

Dbl. Ruffled Queen

Dbl. Snow Frills

Ebb Tide

Ember Pink Sup.

Fair Elaine

Fancy Free

Feathertop

Finesse

Fire Dance, r

Florabella

Fringed Pom Pom

Fuchsia Bride

Geneva Nueva

Gibson Girl

Good News

Green Beads

Green Dawn

Green Froth

Headliner

Holly Halo

Hollywood Ace

Hugonaut

Jeweltone

Jubilee, dbl p

Kathy Jean

Legionnaire, b

Lemon Drop

Lingo

Little Giant Blue

Little Giant Pink

Little Giant Purple

Love Song

Lucky Streak

Marilyn K, dbl b

Masquerade, dbl

May Melody, dbl b

McGentry

Melody Air

Mistletoe

Mr. Lincoln, b

Pink Camellia, dbl

Pink Chiffon, dbl

Pink Constellation

Pink Drift

Pink Geneva

Pink Monarch	Shag, dbl	Star Glazer
Pink Petticoats	Sea Foam, dbl	Star Maker
Pink Puff	Show Cloud, dbl	Templin
Pink Vixen	Show Day	Thunderhead
Play Boy Sup.	Show Stopper	Torchy
Prestige	Skywayman	TV Vallen Pink
Pride of Rochester, dbl	Snow Ball	Whiff
Priscilla Landaker	Snowy Princess	Wintry Nite, dbl
Redderness, dbl	Spic, dbl b	Wintry Rose, dbl
Red Glow	Spanish Senorita	White Goddess
Rose Sparkler	Sparkling Waters, b	White Pride Sup., dbl
Rose Wing	Spotlight, p	Zolanda

African Violet Leaves 35c ea. 3 for \$1.00. \$3.00/doz. Any over 12, 25c ea. 25/\$5.00. We give extras depending on size of order. We will be glad to make selections for you if you will give us price range, color, single or double.

After Glow	Frivoletta, dbl r	Red Mahogany
Akron Girl	Geneva Beauty	Rob Roy, dbl
Alaskan Waters, dbl b	Great Day, dbl p	Roseline
Angel Lace	Her Grace	Rosemead
Appealing	High Noon	Ruffled Geneva
Bernice, dbl b	Improved Boyce Edens	Ruffled Queen
Black Beauty	Iroquois	Ruthie, dbl p
Blue Cluster, dbl b	June Bride, w	Santa Cruz
Blue Heiress	Kimberly	Santa Maria
Blue Lady	Lilac Dale, dbl	Sea Froth
Blue Warrior Sup.	Little Sweetheart, dbl p	Sheer Delight
Brenda Girl	Longfolia Dbl. Pink	Senora Ramona
Carmen	Love Knot	Shasta
Cathy Reed	Mark Roberts	Sheila
Celery, b	Mary's Choice, dbl	Show Queen
Centennial Pink	Mary Mead	Silver Field, dbl
Chartreuse Lace, w	Mary Thompson	Sky Trailer, dbl b
China Doll	Matchmate	Skywayman
Clear Skies	Minnetonka, dbl	Span
Coppertone	Minstral	Star Pink
Corrine, dbl w	Minuet	Star White
Crusader, dbl r	Miss Monroe, dbl r	Starry Eyed
Cup of Claret, r	Monterey	Sugar Babe
Cydonia, dbl b	Mr. Chicago	Sunbonnet Sue
Dassell	New Dawn, r	Sunday Pink
Desert Glow	Nightingale	Sweetheart Rose
Dixie Moonbeam	Ohio Bountiful	Sweet Sixteen
Dolly's Dream	Ohio Skies, b	TV Beaumont Beauty
Dbl. Garnet, r	Olivia	TV Chaperone, dbl r
Dbl. Inspiration Sup.	Pacific Moon, w	TV Cut Velvet, dbl
Dbl. Midnight	Pacific Shadows, b	TV Jealousy, dbl
Dbl. Red Comet	Pandora	TV Patio Dance, dbl b
Dbl. Uncle Bob	Pink Crown	TV Play Boy
Dbl. Violet	Pink Cushion, dbl	TV Scandal, b
Evelyn Johnson, dbl p	Pink Joy	TV Stagline, dbl
First Kiss, dbl	Pink Waverly	TV Summer Dream, dbl
Finlandia, b	Pirate Gold	TV Whispers, dbl
Fineline	P. T. Whimpsey, dbl	Valor
Flamingo, dbl p	Prima Donna	Velvet Queen

BEGONIA FAMILY—Begoniaceae

How to Grow Tuberous Begonias. No plant or flower is more beautiful than that of a well grown Tuberous Begonia. They may be grown in pots or in the garden in most states. They are semi-tropical but do not do well in the tropics.

In Calif., south of San Francisco, they do best near the coast but we grow fine plants and flowers in this hot, dry inland valley by cooling them off by daily sprinkling plants. Our flowers tho are smaller than those grown in cooler areas. Water hurts neither foliage nor flowers. The best place is in a lath house, north of a building or under trees here.

Worth Brown, in his book on Tuberous Begonias (which you should have; see our listing under "Books") recommends them also for pot culture in the house or green-houses. The tubers we sell should have 7" pots.

A loose sandy soil containing much well rotted leaf mould is best. For pots, one may use $\frac{2}{3}$ leaf mould and $\frac{1}{3}$ rich, very sandy loam. If not very sandy add enough sand to the mixture to make it quite gritty. Most commercial growers add a very small portion of dry, powdered steer or sheep manure or well rotted stable manure. It should not be close to the tuber. Do not venture to be liberal. It is probably safer to use liquid fertilizer like Spoonit when plants are well advanced in growth. It is safe to add a tablespoonful of bone meal to each pot.

Do not pot or plant tubers until a sprout appears. A famous grower advises they be spread out in a warm, dark room, the eye up, for sprouting and that moist sphagnum is unnecessary. For potting directions see general culture. Pot or plant sprouted tuber, covering entire tuber. Begonias are shade plants but to bloom well they should have all the sun they can stand without burning.

Begonias like moisture but do not overwater starting tubers or small plants. It is a good plan to dust tubers with sulphur to prevent mildew. If it starts, use sulphur.

If you want fine large flowers, pinch off all but one sprout on tuber—except on the Lloydii. Dropping of buds may be caused by mildew, overwatering, lack of fresh air circulation, too dense shade or too hot.

We list $1\frac{1}{4}$ "- $1\frac{1}{2}$ " tubers, a medium size. The size of tubers does not govern size of flowers. Even small tubers produce full sized flowers, but smaller plants. Culture does affect size of flowers and plants. For the best reference book on Tuberous Begonias get Worth Brown's book listed in this catalog.

Prices. Please note that the dozen rate applies only when 6 or more tubers of one kind or assorted are packed in one bag. If separately labelled, 12 tubers take the single rate as is our rate on all bulbs.

Giant Ruffled Doubles. Improved Camellia type. Ten colors: Apricot, Blush, Pink, Salmon, Scarlet, Red, Orange, Rose, Yellow, White. Price 30c ea., 6 of one kind or assorted, \$1.50. The ten var., in one bag for \$2.60.

Giant Double Picotee. White with pink edge, White with red edge, Salmon with scarlet edge, Rose, Red and Apricot. 30c ea., all 6 for \$1.55.

Giant Single Crispa or Frilled. Very large, profusely frilled and ruffled, single flowers. Pink, Yellow, Scarlet, Rose and Apricot. 30c ea. 5 colors \$1.30.

Double Hanging Basket, or Lloydii. There are many blossoms per tuber. An improved large-flowering strain. Red, Salmon, Apricot, Rose, Yellow, White and Pink. 30c ea., all 7 colors, \$1.75.

Crispa Marginata. Single. Crispa type flower with margin in a different color. White with pink edge and Salmon with scarlet edge. 30c ea.

Multiflora Gigantea. This new strain produces large numbers of medium size blooms of good form. Excellent for pot or bedding. 30c ea., 6 for \$1.50., 12 for \$2.50.

Narcissiflora. The flower resembles a trumpet daffodil. In a mixture of yellow, salmon, orange, and scarlet. 30c ea., 6 for \$1.50, 12 for \$2.50.

Begonia Evansiana. Hardy Tuberous Begonia. No northern customers have reported

its loss by freezing. If mulched we will guarantee hardy. Large tubers can be planted 4" deep, smaller in proportion. The 2 ft. plants have typical begonia foliage and a multitude of pink flowers. Recommended for shade garden, but stands quite a bit of sun if watered liberally. Order as early as possible, as often long sprouts have developed by Apr. 1. Sizes as available, 50c ea. 6 for \$2.50.

All of the above 33 varieties of Tuberous Begonias, each type in a separate bag, listing separately for \$8.90. Price \$8.35.

The following named varieties are the finest of all Tuberous Begonias.

Red Triumph. A ruffled double type of ruby-red with a velvety texture.

Santa Barbara. Ruffled Double Yellow.

Santa Margarita. Ruffled Double Pink.

These are not graded to size but are usually close to 2" and will make large plants. Price \$1.00 ea. Three for \$2.75.

Complete collection of all Tuberous Begonias listed, 36 varieties, single price \$11.90. One of each, special price \$11.00.

Semperflorens and Rex. The lovely double semperflorens are very popular at our greenhouse. We have three pinks with dark foliage, so unless you tell us not to substitute, we will send the best we have at the time of sending. Please add 50c for postage and packing.

Begonia semperflorens. Carmen Queen, Pink Camellia or Carlton Pink and Carlton Delight (red) \$1.00 ea.

B. Rex. Sue Zug. Beautiful red leaf, \$1.50.

B. Rex assorted varieties. We have a number of nice varieties at \$1.50. 3/\$4.00.

B. Iron Cross. Much in demand. Small \$3.00.

THE ORCHID FAMILY — Orchidaceae

The ideal place for an amateur to grow orchids is in a hobby greenhouse.

Our recently revised 12 page booklet *How to Grow Orchids* is now 75c per copy, postpaid. Add 3c sales tax in California.

Culture of Cattleyas. By far the most desirable of orchids. Many amateurs are having success in growing and flowering this most beautiful flower. When ordering, if not before be sure to order the "1949 Orchid Price List." Briefly you must have a greenhouse, a room or a glassed in porch where the plants will have good, strong light but no direct sun, unless a little in very early A.M. or late P.M. Greenhouse glass must be shaded by a coat of white wash or shading compound. In the home, shading may be had by using muslin curtains. If the foliage becomes very light green or yellowish the light is too strong; if a deep rich green, the shade is too much. 65° to 80° is close to the best temperature range. Note the temperature, light exposure and humidity favorable to African Violets. The same is about right for Cattleyas. You can grow them side by side. But watering is different.

We spray the foliage of Cattleyas at least once a day in summer and if hot often twice. This cools them. Do this about noon, earlier if temperature becomes too high. Do not spray in late P.M. as foliage should become dry before night. When cool weather arrives we spray less often, much less often in winter. Once or twice a week may be enough or even too much if you do not properly heat for their comfort. A little water held around the base of a bud spathe may cause it to blacken and rot off. Much water on the roots or surfaces of osmunda will rot the roots. Over watering Cattleyas is the most common error. We do not usually pot water oftener than once a week and often spraying is enough if some falls on the osmunda. You must study your plants and note their reactions. Success will reward you.

Customers who have bought Cattleyas from us may consult us about their plants if trouble occurs. All of our plants are potted in the best grade osmunda. Because we ship our plants we do not like fir bark material.

Cattleyas. We offer blooming size plants in good osmunda fiber for \$5.00. These are in 4" or 5" pots. Assorted species and hybrids.

White Cattleyas are not common. The following are mostly June flowering, for brides but do not pin us down on this as cultural conditions may result in a wide variation in flowering date. **C. Edithiae**, purest white \$8.50. Our selection of other whites, \$6.50.

Potted Cattleyas can only be shipped by Express f.o.b.

Brassavola culture. They may be grown in any media used for growing orchids. They may be grown in lath house or under trees in Southern California.

Brassavola glauca. Large white flower, slightly fragrant, often tinted with green, lip white sparsely marked with pink and purple or entirely white. In 8" basket, \$10.00 by express.

Brassovola Digbyana. Plant resembles a Laelia. The white flowers have a fringed lip and are used to cross with Cattleyas in order to get fringed lips. We grow in baskets of Sphagnum but others grow in osmundine in pots like Cattleyas. This species is hard to get. Price \$10.00, in 8" wire basket, f.o.b. express.

Epidendrum o'brienanum. This orchid has a large terminal cluster of brilliant red flowers, each in the typical orchid form. The flowers open 10 or more at once and are about 1¼" wide. The plant makes a large cluster of tall stems, 3 ft. or more. Under good culture they flower all the time. They will grow well in full sun exposure; and abundance of water in summer. They grow easily in the garden in the south. In the north they are easy in pots or baskets. Small rooted plants 75c ea.

Osmundine, best Florida grade, \$2.00 lb. postpaid.

MISCELLANEOUS

Tecolote Ranunculus. Giant Double Camellia type blooms and huge brilliant Ruffled Doubles. 50c doz. \$3.75/100. **Anemone St. Brigid.** Large double and semi-double flowers. Mixture of brilliant hues and delicate shades of scarlet, rose, pink, lavender and blue. 60c doz. \$5.00/100. **Anemone Monarch de Caen.** Magnificent strain of single Poppy Anemone with immense flowers. Mixture 50c doz. 100/\$4.00.

Culture. Hardy only in deep south. It is best to start after summer heat has gone—in mild autumn weather. Don't forget to keep them moist. Transplant to garden in deep south or to pots in north. You can start them or grow them in a cool room in the house in winter. They should have sandy soil with peat added. Heat is their enemy.

Aphelandra Louisi. A new plant for the window garden or greenhouse. Deep green with white veins. Flowers are yellow. New and very popular. Small plants \$1.00 each.

Canna Pfitzer Chinese Coral. New. Striking amber and pink. **Canna Pfitzer Pink.** Salmon pink. Both have large flowers, green foliage. Dwarf. \$1.00 ea. 12/\$10.50.

Ctenanthe oppenheimiana, var. tricolor. **Marantaceae.** A beautifully colored foliage plant. The foliage is striped light and dark green on upper surface with a few white stripes and blotches. The under side is maroon. Grow in 5" pots, acid soil—peat or sphagnum with sand. Small, \$1.00 ea.

Ceropegia. The following are vines having long trailing or twining stems. They may be grown in soil composed of loam, sand and leaf mould or peat, in pots or hanging baskets. Plant at once and keep only slightly moist until started. The flowers are very unusual. Prices are for small tubers or cuttings.

Ceropegia Woodi. Hearts on a String. Sweetheart vine. Rosary vine. Heart shaped leaves. The most desirable species. 50c.

C. debilis. Cylindrical leaves. Rapid grower. 35c.

C. Barkleyi. The oblong leaves are pointed at the apex. 60c.

Cacti and Succulents. 10 assorted Cacti or Succulents, \$1.50. 20 all different. \$2.25.

Heliconia species. Heliconias are sometimes grown in the greenhouse, or out-of-doors in warm regions for the foliage effects, making large clumps if given room. The plants thrive well in rich loam with plenty of water. They have large banana-like leaves. \$2.00.

Streletzia reginae. Bird-of-Paradise. We have a limited number of blooming size plants we can let go at \$7.50 each by express collect. We have four-year-old plants at \$3.00, these should flower in from one to two years, with good culture.

Gingers. Culture. Plant in rich soil, provide light shade and plenty of water. They

should never dry out while growing. They refuse to flower if kept too shaded. The flowers are produced in terminal heads and are very fragrant. Delivery anytime.

Alpinia nutans. Shell ginger. Very tall growing evergreen ginger lily. The attractive flowers are produced at the top of the leafy stems. Flower spikes hang downward like a cluster of grapes. In bud it is white tipped pink. Open flowers exhibit orange and red inside. \$1.75.

Hedychium coronarium. Garland-flower. Floral bracts large and firm and closely imbricated, with 4 to 6 white very fragrant flowers. \$1.00.

H. flavum. Yellow Ginger. Much like *Gardnerianum*, tall grower. \$1.00.

H. gardnerianum. (Kahili Lily) Lvs. 1½ ft. long and 6 inches wide; fls. light yellow, with red stamens. Fragrant and a sure bloomer. \$1.00.

Phaecomeria speciosa. Torch Ginger. The most striking of all the Gingers. Striking flowers of waxy cerise-red in great profusion. The cluster resembles a huge spear or torch. When fully open, the bloom somewhat resembles a double peony. Fine for cutting, the blooms bring very high prices. \$7.00 ea.

Curcuma roscovana. A rare plant with showy foliage and large flower spikes of vivid orange. \$5.00 ea.

Kaempferia. The jewels of the Ginger Family of plants; They have extremely ornamental foliage and fugitive, bright and cheery flowers. Excellent subjects as house or glasshouse plants. Pot in a rich, porous compost in four inch pots and treat like any other deciduous bulbous plant. Water and fertilize well when in active growth, but keep nearly dry when dormant. For best results repot in fresh compost each winter.

Kaempferia galanga. The bright green oval leaves lie flat on the ground. The flowers are crystal white with purple eyes, and bloom in summer. Very dwarf. \$2.00.

K. gilberti. Oblong leaves with broad white margins, grown for their decorative value in prior years. Flowers purple and white. \$2.00.

K. rotunda. The very sweet-scented, fugitive flowers appear in the spring before the leaves, being white with a lilac lip. In summer the plants have large decorative leaves 2 feet long, with white and green variegations not unlike a *Maranta*. This Resurrection Lily can be bloomed from the dry tuber like a *Colchicum*. Most unusual. \$2.50.

THE PINEAPPLE FAMILY — Bromeliaceae

Bromeliads include *Billbergia*, *Aregelia*, *Aechmea*, and many other genera.

Billbergias are most unusual and fascinating plants. Not only are the flowers in intriguing pastel shades but the floral display is made brilliant by the large vividly colored bracts that cover the scape. The leaves form a rosette and are more or less rigid. Some have brightly colored leaves and others are often mottled, striped or barred. All are desirable foliage plants.

In the outdoor garden they should have the same soil as recommended for pots. A few, like "nutans," will grow in nearly any soil but will do much better in the type recommended. They do well on the trunks of Palms.

They need about half shade. Too much sun will burn and finally destroy the foliage. Those species and varieties having highly colored foliage do not develop their rich colors when too deeply shaded. Most of our plants are grown in a well shaded *Clivia* house. When well established and growing, richer colors may be brought out by giving a little more sun than we do. **Culture** of *Aechmea* and *Aregelia* is the same.

Aechmea calyculata. The cones of bright yellow flowers are carried on thin stiff stems 18" high. Tubular rosettes of bright green foliage are about 15" high. \$1.50.

A. mariae-reginae. Robust rosette of broad, gray-green, leathery leaves, recurved and with toothed edge; stout spike with pendant, delicate pink bract-leaves, topped by cylindrical head of red-tipped berries and violet flowers. \$7.50.

A. ortgiesii. A very useful dwarf plant with rosettes of recurved serrated leaves looking more like a *Dyckia* than an *Aechmea*. The deep lavender flowers are carried on a brilliant red cone in the center of the leaves which also become red occasionally while the plant is in bloom. \$5.00.

A. pineliana. Attractive, wide open rosettes of foliage toothed with dark spines, and colored soft shades of rose, copper, gray and green. The stem is covered with red bracts and topped by a small head of yellow flowers. The berries last a long time in color. \$3.00 each.

A. Weibachii. Attractive rosette of oblanceolate coppery-green leaves wine red beneath, and spined; inflorescence on panicle with glowing crimson bracts and orchid-colored ovaries and flowers. \$4.00

Billbergia Burkholtzi. Tall, slender, erect green leaves. Rose bracts, lavender fls. \$2.00.

B. distachia. Long, reddish green lvs., spotted cream. Rose bracts, blue and green fls. 75c.

B. Elvenia Slosson (Nutans x Alberti). Tall plant with very attractive flowers in spring. It takes a lot of postage and its fine quality makes it cost \$3.00 each.

B. nutans. Mid-winter, beautiful inflorescence on small plants. Fine pot plants. 75c.

B. pyramidalis. Wide green lvs. Red fls. tipped violet, red bracts. \$2.00.

B. Rubro-cyanea. Most colorful foliage, red and green spotted cream. Green fls. edged blue. Crimson bracts. \$1.00.

B. speciosa. Green lvs., striped on back. Green fls., tipped blue. Rose bracts. \$2.00.

B. Theodore L. Meade. Green lvs. and large, beautiful inflorescence, continuous all year on new growths. \$1.50.

B. thrysiflora (pyramidalis x amoena). Finest hybrid. Beautiful inflorescence. \$1.50.

B. Zebrina. Lvs. banded white on back. Salmon bracts, green fls. \$1.50.

Cryptbergia Meadi. A bigeneric bromeliad hybrid of *Billbergia* and *Cryptanthus*. The flowers are very insignificant, but foliage is lovely, being of pinkish and bronzy tints especially when given plenty of light. Highly recommended for the window garden. \$1.00 ea.

Neoregelia spectabilis. Called "Fingernail plant" because of the red tips of the metallic olive green leaves; gray crossbands beneath; blue flowers in low cushion. \$3.50.

Big 4 collection. Nutans, Distachia, Rubro-cyanea and Zebrina. Value \$3.50. Price \$3.25. We will send larger plants if you order them to come by express, f.o.b.

Sansevieria Golden Hahnii. Just like Hahnii in size and form but golden yellow in color with some green variegations. New and scarce. \$4.00 ea.

Tillandsia ionantha. A miniature plant of xerophytic habit. It is strictly an air plant and does not have to be planted except for convenience. In nature it grows on tree bark, rock or telegraph wire. The best method of handling is to plant in a very small pot of osmunda and set in full sunlight. Water the leaves occasionally. The two inch rough leaves are crowded together urn-shaped. When in flower the leaves turn red. The flowers are very large for the size of the plant, tubular in form and purple in color with yellow anthers at the tip. This is one of the finest plants we know of for a small sunny window garden. \$1.50 ea.

Tillandsia lindeni. Gracefully curved pointed leaves with maroon lines deepening towards the base. The flattened ten inch flower spike is light pink with large blue flowers emerging alternately from the sides. Very long lasting. Some consider this the finest of all bromeliads. \$7.50 ea.

Quesnelia arvensis. This is a terrestrial plant and should be grown in the ground or a sandy soil mixture with peat added, if potted. The leaves are large and spiny. The bloom is erect, a brilliant shade of pink in a large closely packed umbel. Should be grown in open sunlight. Rare. \$5.00.

Q. liboniana. Light green foliage that is rather stiff in form. The flowers are stunningly different, being a combination of deep orange and blackish purple. \$1.50 ea.

Vriesia marie. "Painted Feather," hybrid larger than *carinata*, light green foliage tinted pink and showy, flattened, featherlike spike with bracts salmon-rose at base, and yellow dotted brown toward apex; yellow flowers. \$7.00.

V. carinata. A small growing plant with about six-inch spread, plain green shiny leaves. Red, yellow and green colors on a fan-like structure on end of a ten-inch stem. The color lasts a long time. Summer blooming. \$7.50.